2018/73

1992

MITSUBISHI

Service Manual

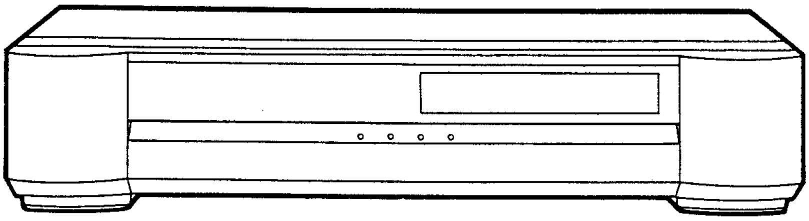
V20961

VIDEO CASSETTE RECORDER

VHS
PAL

MODEL

HS-M59(B)
HS-M59(E)
HS-M59(IR)
HS-M59(Y)



Only cassettes marked VHS can be used with this video cassette recorder.

SPECIFICATION

Tape Format	VHS 1/2" high-density video cassette tape
Power Source	AC 240 V;50 Hz [B] AC 230 V;50 Hz [E,Y] AC 220 V;50 Hz [IR]
Power Consumption	Approx. 35W
Television System	625 lines, 50 fields System CCIR IPAL [B,IR] System CCIR B&G PAL [E,Y]
Video Recording System	Azimuth helical scanning system
Luminance	Frequency modulation recording
Colour Signal	Low frequency conversion sub-carrier phase shift recording
Hi-Fi Audio Recording System	Azimuth helical scanning system,Frequency modulation, deep layer recording
Linear Audio Track	1 track
Tape Speed	23.39 mm/sec (PAL SP mode) 11.70 mm/sec (PAL LP mode) 33.35 mm/sec (NTSC SP mode) 11.12 mm/sec (NTSC EP mode)
Record/Playback Time	240 min. with E-240 cassette (PAL SP mode) 480 min. with E-240 cassette (PAL LP mode) 160 min. with T-160 cassette (NTSC SP mode: playback only) 480 min. with T-160 cassette (NTSC EP mode: playback only)
Heads:Video	4 rotary heads
Hi-Fi Audio	2 rotary heads
Audio/Control	1 stationary head
Erase	1 full track head
Video input	0.75 to 1.5 Vp-p, 75 ohm unbalanced EURO AV socket
Audio Input:Line	–8 dBs, 50k ohm unbalanced EURO AV socket and RCA pin plug
Video Output	1.0 Vp-p, 75 ohm unbalanced EURO AV socket
Audio Output	–6 dBs, 1k ohm unbalanced EURO AV socket and RCA pin plug
Reception Frequency	47~89, 104~470 MHz [E] 47~118, 118~300 MHz [Y]
VHF	44~89, 104~300 MHz [IR]
UHF	470~870 MHz
Operating Temperature	5°C to 40°C
RF Channel Output	Set to Channel 38[B,IR]/Channel 36 [E,Y] Channel 32~40 selectable
Weight	Approx. 6.4kg
Dimensions	425(W) x 100(H) x 354(D)mm
Timer	8 programmes for any channels in one month/every day/every week day 24 hour digital synchronized with crystal oscillator frequency.
Channel Selection	99 position Up/Down + EXT
Deck	F-Deck

- Weight and dimensions shown are approximate.
- Design and specifications are subject to change without notice.

MITSUBISHI ELECTRIC

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CIRCUIT DIAGRAMS

DISASSEMBLY

1. Removal of Top Cover

A. Remove four screws (ⓐ ~ ⓓ) retaining the Top Cover, as shown in Fig. 1.

B. Gently expand the bottom edges of the Top Cover, then slide toward rear in the direction of the arrows.

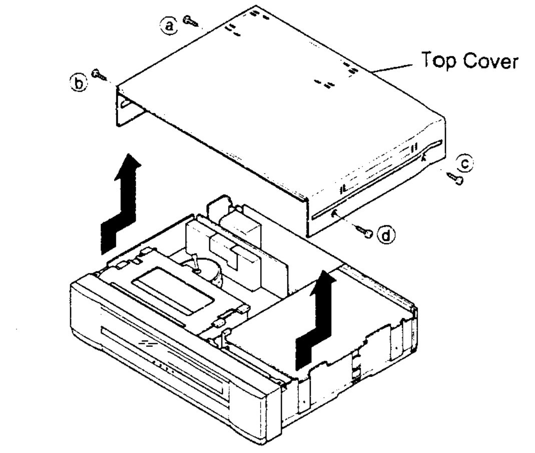


Fig. 1

2. Removal of Bottom Cover

A. Remove twelve screws (ⓐ ~ ⓛ) retaining the Bottom Cover, as shown in Fig. 2.

B. Remove the Bottom Cover.

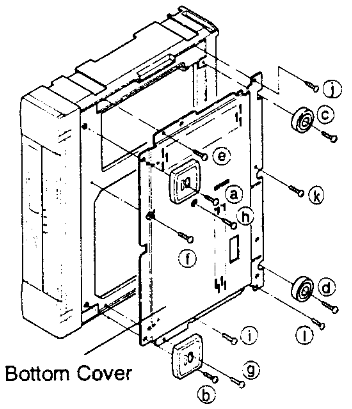

ⓙ
ⓒ
ⓔ
ⓐ
ⓚ
ⓗ
ⓕ
ⓓ
ⓘ
ⓛ
Bottom Cover
ⓖ
ⓑ

Fig. 2

3. Removal of Front Unit

A. Remove the Top Cover. (Item 1)

B. Unfasten six snaps (ⓐ ~ ⓕ), as shown in Fig. 3.

C. Remove the Front Unit.

Note: How to install at the Front Unit.

A. Check that the door arm is in the lower position.

B. While holding the cassette door open, mount the Front Unit to the VCR and fasten six snaps (ⓐ ~ ⓕ) using gentle pressure to the Front Unit.

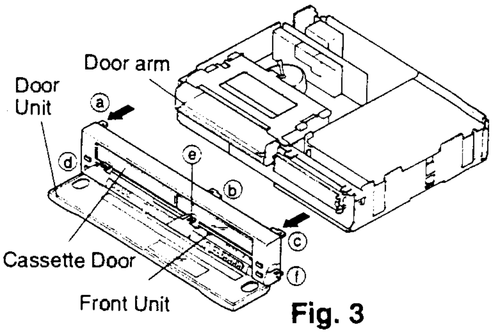

Door arm
Door Unit
ⓐ
ⓔ
ⓓ
ⓑ
Cassette Door
ⓒ
ⓕ
Front Unit

Fig. 3

4. Removal of Door Unit

A. Remove the Front Unit. (Item 3)

B. Remove seven screws (ⓐ ~ ⓖ) retaining the Damper Unit, the Shaft-L unit and the door unit, as shown in Fig. 4.

C. Remove the Door Unit.

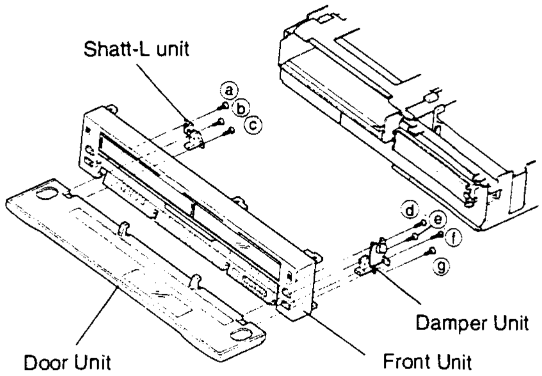

Shatt-L unit
ⓐ
ⓑ
ⓒ
ⓓ
ⓔ
ⓕ
ⓖ
Damper Unit
Front Unit
Door Unit

Fig. 4

SERVICING THE PRINTED CIRCUIT BOARDS

CAUTION: BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE A.C. SOURCE.

Location of Printed Circuit Boards
(Refer to Fig. 5)

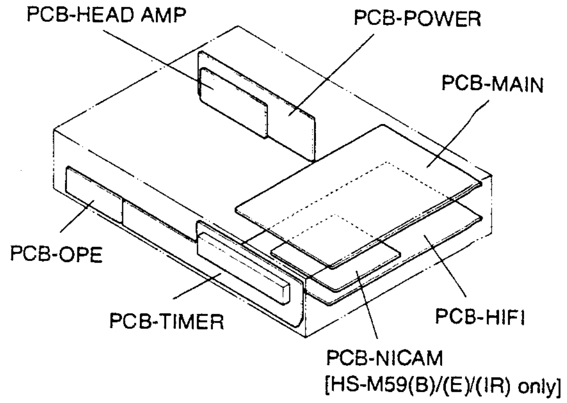

PCB-HEAD AMP
PCB-POWER
PCB-MAIN
PCB-OPE
PCB-TIMER
PCB-HIFI
PCB-NICAM
[HS-M59(B)/(E)/(IR) only]

Fig. 5

Note:

Use caution when disconnecting the flat cable connectors to avoid possible contact problems when reconnected.

1. Removal of PCB-MAIN

A. Remove the top cover. (Page 1, Item 1)
B. Remove five screws (ⓐ ~ ⓔ), as shown in Fig.**6**.
C. Pivot the PCB-MAIN in the direction of the arrow.
D. Hang the edge of PCB-MAIN to the holder on the frame

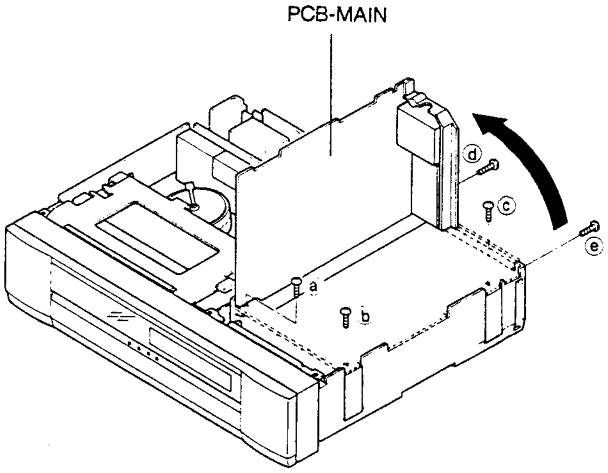


Fig. 6

2. Removal of PCB-NICAM [HS-M59(B)/(E)/(IR) only]

A. Rotate the PCB-MAIN. (Item 1)
B. Unfasten four stoppers (ⓐ ~ ⓓ) and remove the PCB-NICAM as shown in Fig. 7.

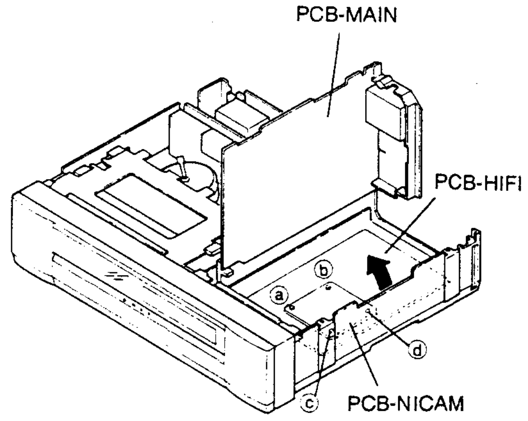

PCB-MAIN
PCB-HIFI
ⓑ
ⓐ
ⓓ
ⓒ
PCB-NICAM

Fig. 7

3. Removal of PCB-HIFI

A. Remove the bottom cover (Page 1, Item 4) and the service of the PCB-HIFI will be available.

B. If it is necessary to remove the PCB-HIFI comply with the following steps.

a. Remove the PCB-MAIN.(Item 1)

b. Remove two screws (ⓐ , ⓑ) retaining the PCB-HIFI, as shown in Fig.8.

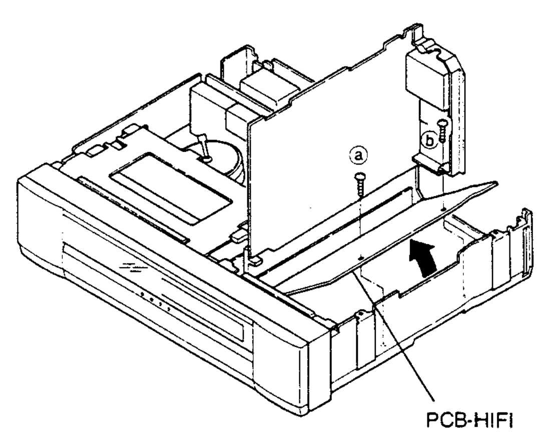


Fig. 8

4. Removal of PCB-OPE and PCB-TIMER

A. Remove the Front Unit. (Page 1, Item 3)

B. Remove two screws (ⓐ , ⓑ) and unfasten four snaps (ⓒ ~ ⓕ), as shown in Fig. 9.

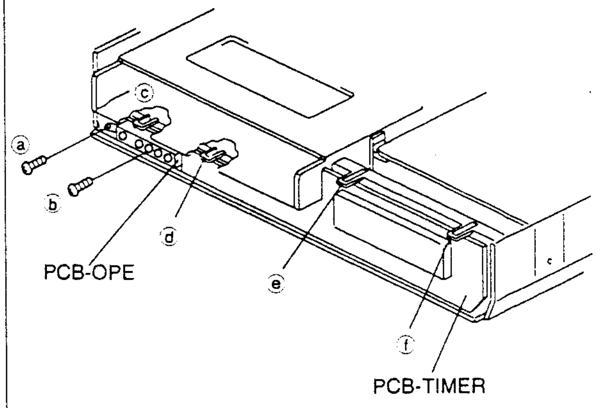

ⓒ
ⓐ
ⓑ
ⓓ
PCB-OPE
ⓔ
ⓕ
PCB-TIMER

Fig. 9

5. Removal of PCB-HEAD AMP

A. Remove the top cover. (Page 1, Item 1)

B. Lift the shield cover-A upward to remove it.

C. Disconnect the FPC cable by gently pulling cover-C of the connector [GB], as shown in Fig. 10.

D. Remove three screws (ⓐ ~ ⓒ) retaining the lead wire and the PCB-HEAD AMP.

E. To service the solder side, remove the shield cover-B, use the extension cord (859C344050) and ground the lead wire, as removed in above para. D.

F. To service the component side, unsolder four soldering points of the shield case and remove the shield case.

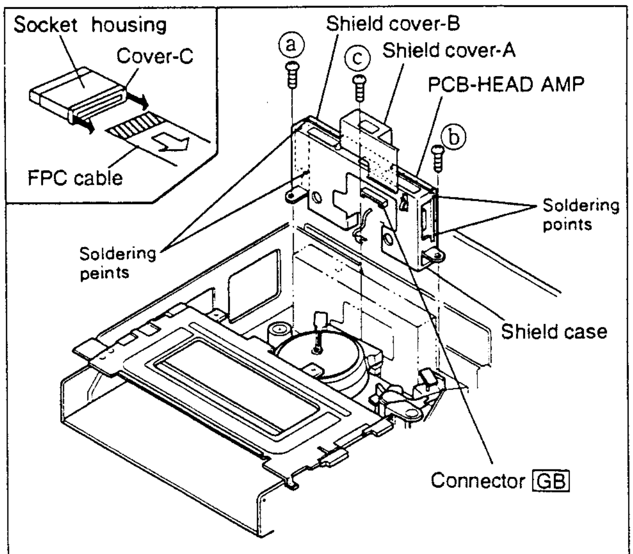

Socket housing
Cover-C
FPC cable
Shield cover-B
ⓐ
ⓒ Shield cover-A
PCB-HEAD AMP
ⓑ
Soldering points
Soldering peints
Shield case
Connector GB

Fig. 10

6. Removal of PCB-POWER and PCB-POWER SUB

A. Remove the top cover. (Page 1, item 1)

B. Remove three screws ((a) ~ ⓒ) retaining the PCB-POWER and two screws (ⓓ , ⓔ) retaining the heat sink as shown in Fig. 11.

C. Remove the holder of AC power cord from the VCR chassis.

D. Unfasten three hooks (ⓕ ~ ⓗ) retaining the PCB-POWER SUB as shown in Fig. 12.

CAUTION:

Power regulators are damaged if power supply is turned on without installing the heat sink.

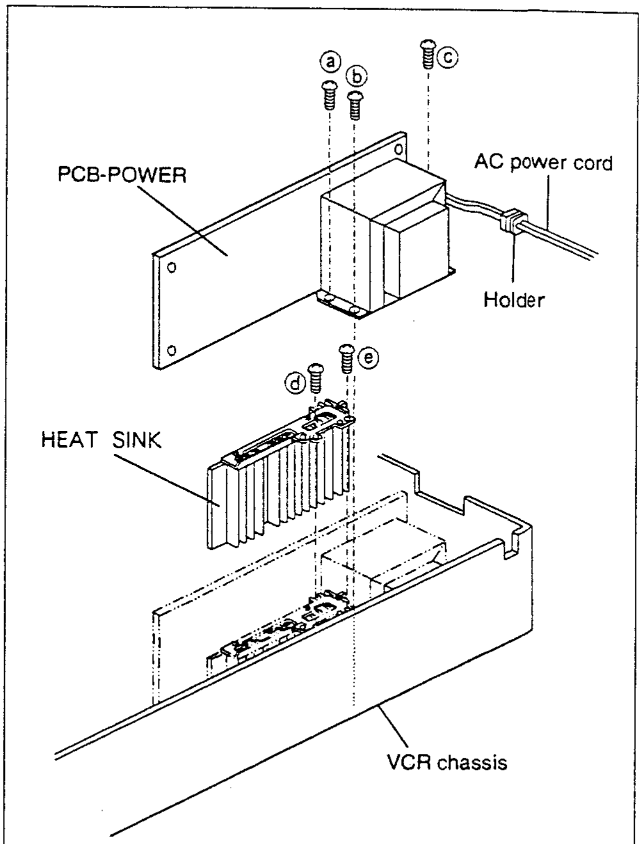

ⓐ
ⓑ
ⓒ
PCB-POWER
AC power cord
Holder
ⓓ
ⓔ
HEAT SINK
VCR chassis

Fig. 11

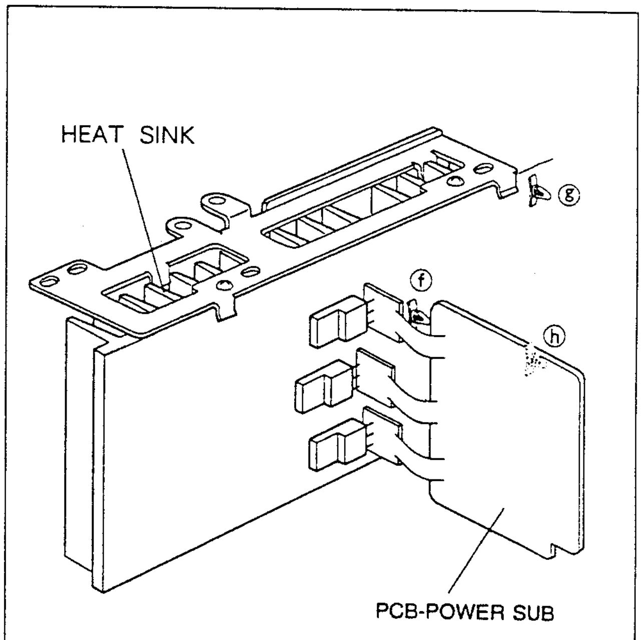
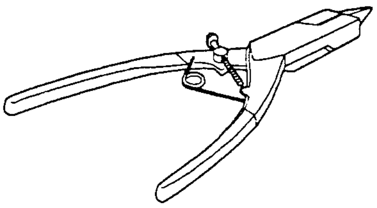
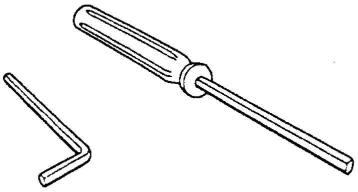
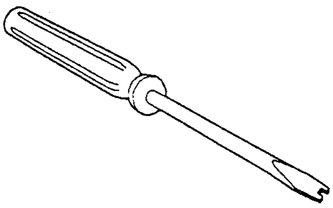
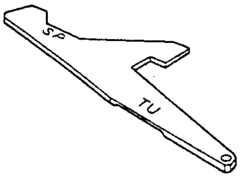
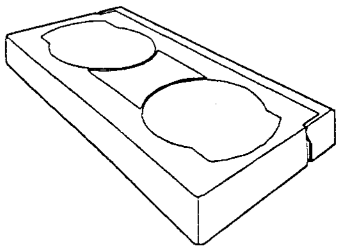
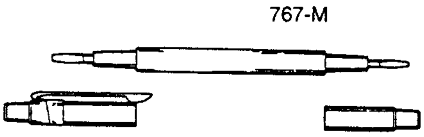
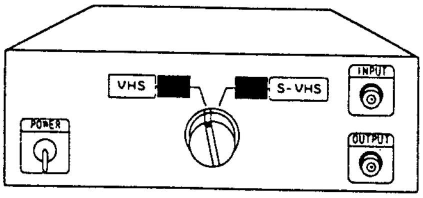
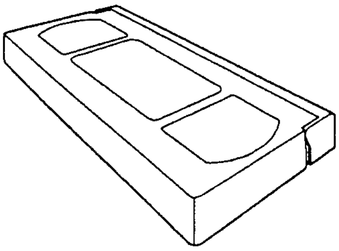
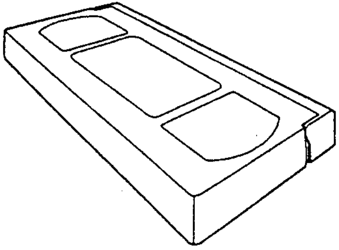

HEAT SINK
ⓖ
ⓕ
ⓗ
PCB-POWER SUB

Fig. 12

MECHANICAL ADJUSTMENT TOOLS

	PURPOSE	METHOD
Grip ring fixer (859C347050) 	A tool for preventing the grip ring from opening excessively.	While opening the grip ring with the tips of this tool, install the grip ring on to the shaft.
Hex Keys(1.5mm)  (859C259020) (859C259050)	The hex keys are used for tightening or removing hexagonal socket head screws which fasten the guide rollers.	Insert the given size(1.5mm) hexagonal socket and turn.
Adjustment Driver (859C259080) 	For adjustment of guide rollers.	Carefully insert and adjust guide rollers.
Reel disk Adj. Jig (859C342020)  	The height gauge is used for measuring height and parpendicularity of the reel disk and Take up guide arm.	The gauge is applied to the part being measured.
Back Tension Gauge (859C345080) 	The back tension gauge is used for measuring the tension of the tape on the supply side.	Load this gauge in the cassette housing and run in the play mode. Read the gauge indicator.
Extension Cord (859C344050)	For PCB-HEAD AMP service	Use when repair of the PCB-Head Amp is necessary.
Cotton gloves	For changing, cleaning and handling of drum, heads and guides.	Use when handling all parts in the tape path.

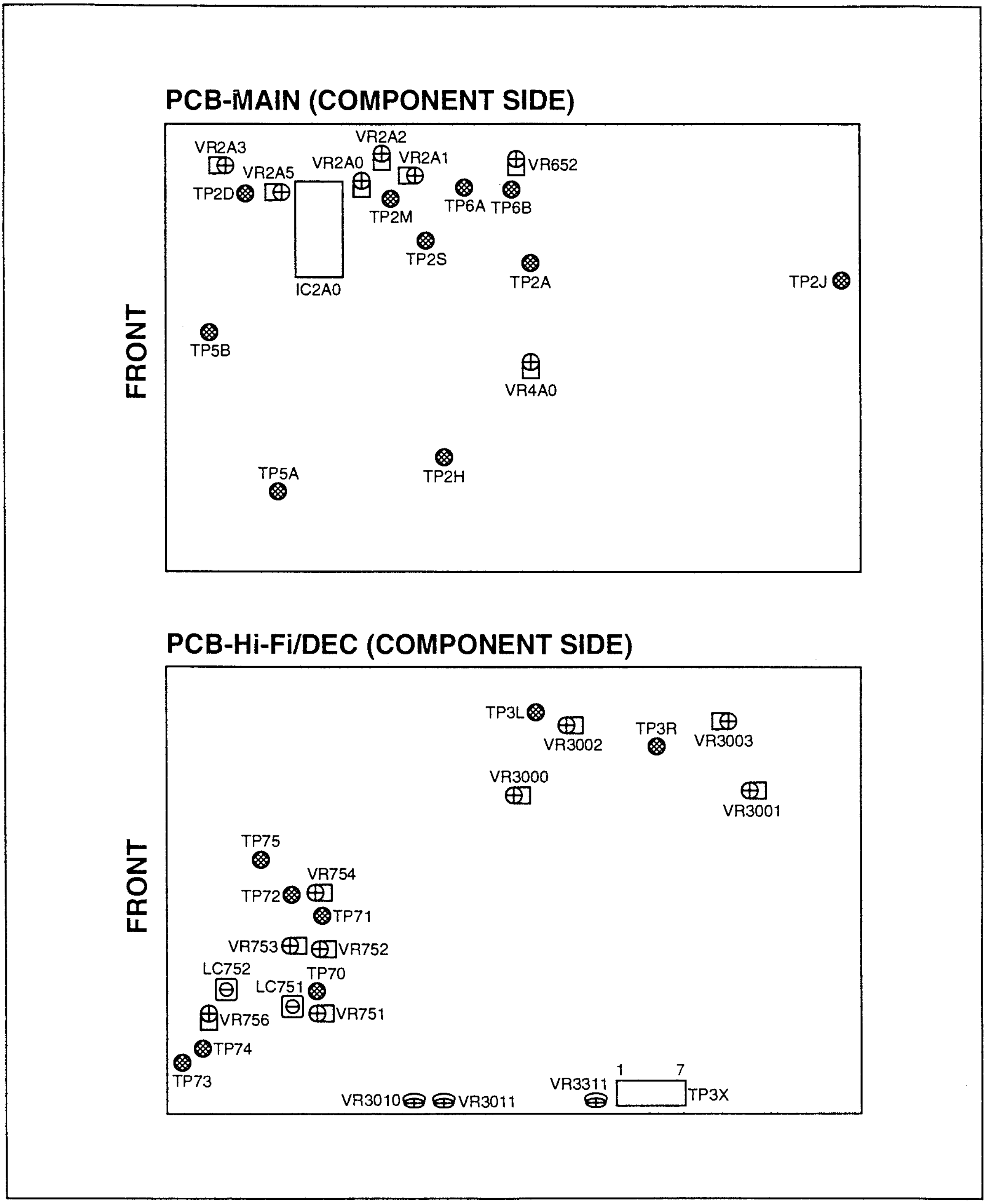
ELECTRICAL ADJUSTMENT TOOLS

	PURPOSE	METHOD
Adjustment Driver (859C338000)  	The adjustment driver is intended to adjust variable resistors, trimmers, transformers etc. in the circuitry.	Select a tip suitable for the particular head of the component concerned and adjust.
Carrier Checker (859C346050)  	Used for the adjustment or inspection of the carrier set deviation.	Use in conjunction with the oscilloscope. For detail refer to the service manual or the attached data.
Alignment Tape(PAL:859C339010) 	Standard signals(VHS Standard) are recorded on the alignment tape and reproduced when required in the adjustment of Y/C circuit, audio circuit and interchangeability alignment.	Install and run in the play mode, the same as for an ordinary tape.
Alignment Tape(Hi-Fi) (859C339030) 	For adjusting the switching point of FM audio. The Video signal can also be used for interchangeability adjustment of SP (3H)/LP (6H) modes.	Install the tape and run the recorder in the play mode. The same as for an ordinary tape.
Record Current Adjustment Jig (859C347080)	For Y/C Recording Level and Hi-Fi FM Recording Level.	For Y/C Recording Level and Hi-Fi FM Recording Level adjustment.

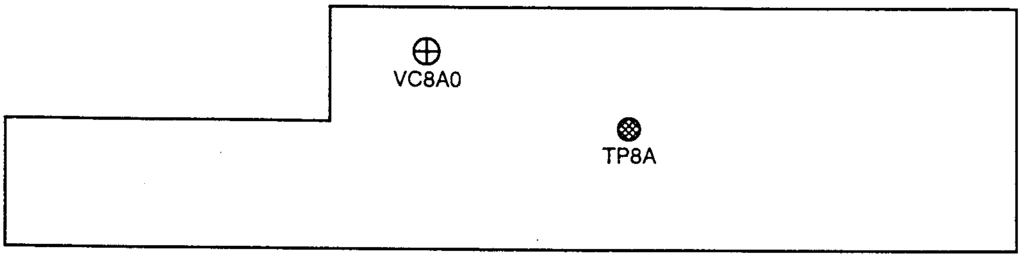
ELECTRICAL ADJUSTMENT

Circuit adjustments become necessary, in most cases, due to the wear of mechanical parts or following the replacement of critical components such as the video head, causing circuit adjustments to vary considerably. Should this occur, be sure to determine the nature of the defect and repair prior to proceeding with adjustments.

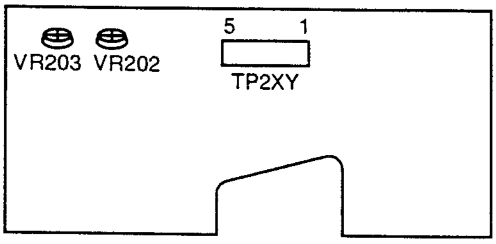
Always use the test equipment recommended for a given adjustment procedure. If the appropriate test equipment is not available, it is recommended that adjustments NOT be attempted. Refrain from the indiscreet adjustment of circuit adjustment controls unless properly equipped to do so.


PCB-MAIN (COMPONENT SIDE)
FRONT
VR2A3
VR2A5
TP2D
VR2A2
VR2A0
VR2A1
VR652
TP2M
TP6A
TP6B
TP2S
IC2A0
TP2A
TP2J
TP5B
VR4A0
TP5A
TP2H
PCB-Hi-Fi/DEC (COMPONENT SIDE)
FRONT
TP3L
VR3002
TP3R
VR3003
VR3000
VR3001
TP75
VR754
TP72
TP71
VR753
VR752
LC752
TP70
LC751
VR756
VR751
TP74
TP73
VR3010
VR3011
VR3311
1
7
TP3X

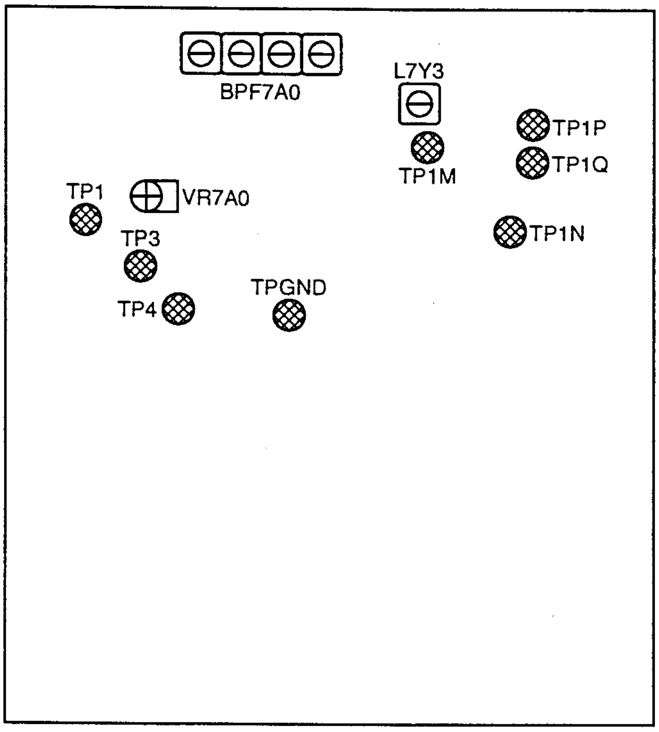
PCB-TIMER (COMPONENT SIDE)



PCB-HEAD AMP (COMPONENT SIDE)


5
1
VR203
VR202
TP2XY

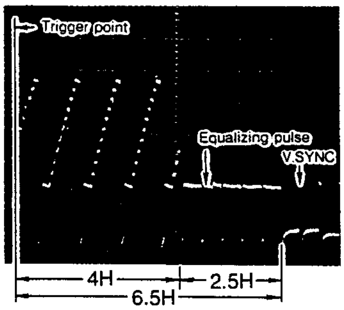
PCB-NICAM (COMPONENT SIDE)


BPF7A0
L7Y3
TP1P
TP1Q
TP1M
TP1
VR7A0
TP1N
TP3
TPGND
TP4

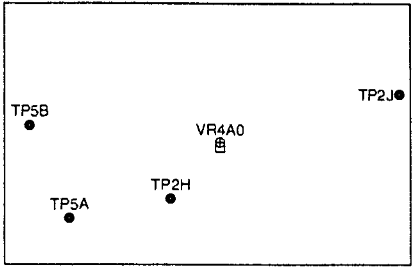
[Servo Circuit] 1. Playback Switching Point	**Adjustment purpose:** Video switch over timing during playback. **Symptom when incorrectly adjusted:** Switching noise or jitter on the playback picture.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 10:1)		Input signal	-----
Test point	TP2J	Using tape	Alignment tape (Grey scale)
EXT trigger	TP2H	VCR condition	Playback
Measurement range	DIV 20mV TIM 50µs	Using Jig.	-----

1. Short-circuit TP5A and TP5B. Confirm that the "DTR" displayed in Fluorescent Display flashes fast.
2. Observe the waveform at TP2J.
3. Set the oscilloscope's slope to (–).
4. Adjust VR4A0 so that the trigger point is located at 6.5±1.0H before the vertical synchronizing signal.



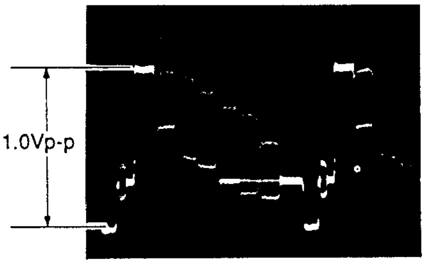
PCB-MAIN (COMPONENT SIDE)



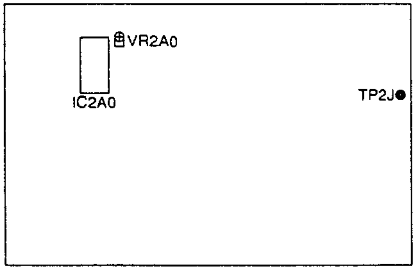
[Y/C Signal Circuit] 2. EE Output Level	**Adjustment purpose:** Output level of video signal at Stop mode. **Symptom when incorrectly adjusted:** Too bright or too dark image: colour signal is produced incorrectly.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 10:1)		Input signal	RF signal (Colour bar)
Test point	TP2J	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	DIV 20mV TIM 10µs	Using Jig.	-----

1. Be certain that nothing is connected to the VIDEO OUT terminal.
2. Observe the waveform at TP2J.
3. Adjust VR2A0 so that the amplitude of waveform is 1.0Vp-p.



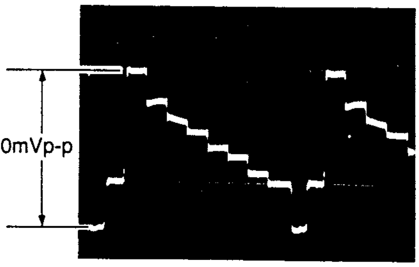
PCB-MAIN (COMPONENT SIDE)



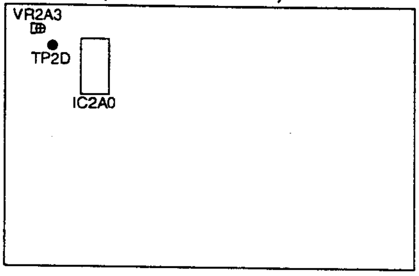
3. Clamp	**Adjustment purpose:** Set the level of video signal. **Symptom when incorrectly adjusted:** Blurred image, white streaking black streaking.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 10:1)		Input signal	RF signal (colour bar)
Test point	TP2D	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	DIV 10mV TIM 10µs	Using Jig.	-----

1. Observe the waveform at TP2D.
2. Adjust VR2A3 so that the amplitude of the waveform is 490mVp-p.



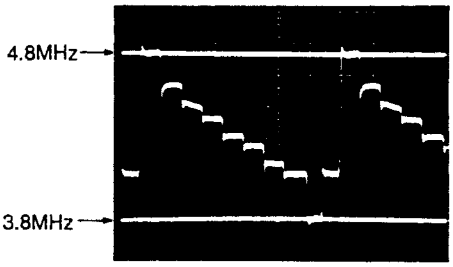
PCB-MAIN (COMPONENT SIDE)


VR2A3
TP2D
IC2A0

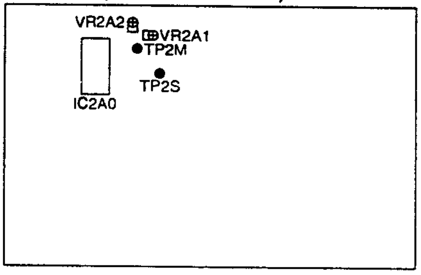
4. Carrier set, Deviation	**Adjustment purpose:** FM carrier frequency and frequency deviations. **Symptom when incorrectly adjusted:** Too bright or too dark image: colour signal is to reproduced incorrectly. Horizontal noise or out of sync.

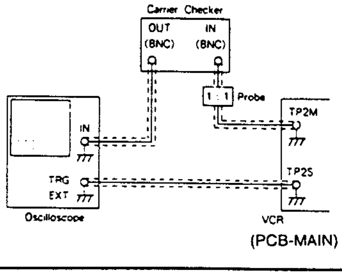
Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 1:1)		Input signal	RF signal (colour bar)
Test point	TP2M	Using tape	-----
EXT trigger	TP2S	VCR condition	STOP
Measurement range	DIV 0.2V TIM 10µs	Using Jig.	Carrier checker

1. Observe the waveform at TP2M using the carrier checker.
2. Adjust VR2A2 and VR2A1 so that the response waveform 3.8MHz line and 4.8MHz just touch each of white lines on the oscilloscope.



PCD-MAIN (COMPONENT SIDE)

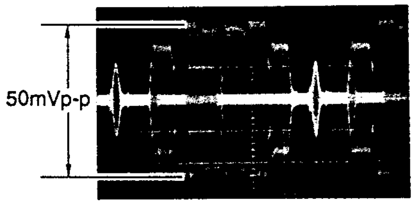

VR2A2
VR2A1
TP2M
TP2S
IC2A0

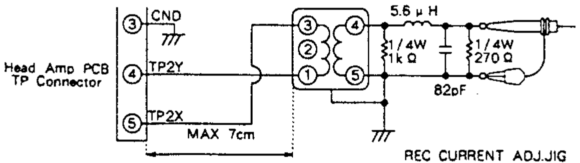

Carrier Checker
OUT (BNC)
IN (BNC)
1 : 1 Probe
IN
TRG EXT
Oscilloscope
TP2M
TP2S
VCR
(PCB-MAIN)

5. Y/C Recording Level	**Adjustment purpose:** Level of video signal just before recording on tape. **Symptom when incorrectly adjusted:** Low luminance signal S/N ratio, beats, colour bounding of chrominance signal or flicker.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 1:1)		Input signal	RF signal (colour bar)
Test point	TP 2XY pin ⑤ and pin ④	Using tape	A tape
EXT trigger	TP2S	VCR condition	LP REC
Measurement range	DIV 10mV TIM 10µs	Using Jig.	REC CURRENT ADJ. JIG

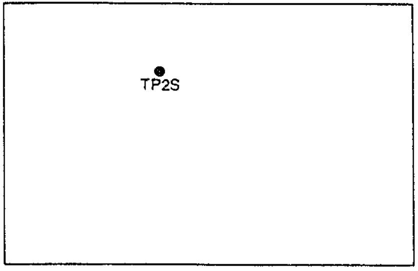
1. Observe the waveform at TP 2XY pin ⑤ pin ④ using the REC CURRENT ADJ. JIG.
2. Turn VR203 fully counter clockwise as seen from top side.
3. Adjust VR202 so that the amplitude of cyan is 50mVp-p.



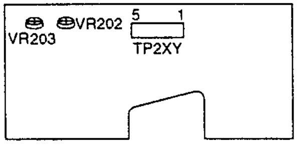


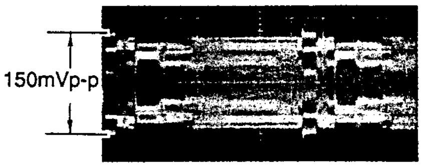
4. Set the oscilloscope's probe to 10:1.
5. Set the oscilloscope's volt range to 5mV/div.
6. Adjust VR203 so that the amplitude of horizontal sync is 150mVp-p.

PCB-MAIN (COMPONENT SIDE)



PCB-HEAD AMP (COMPCNENT SIDE)

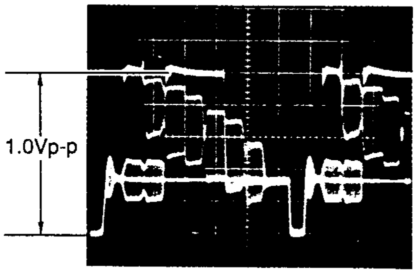




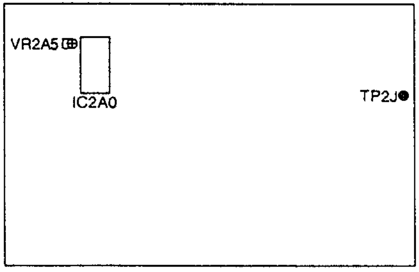
6. Playback Video Output Level	**Adjustment purpose:** Video output level during playback. **Symptom when incorrectly adjusted:** Colour signal is not correctly reproduced.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 10:1)		Input signal	-----
Test point	TP2J	Using tape	Alignment tape (Colour bar)
EXT trigger	-----	VCR condition	Playback
Measurement range	DIV 20mV TIM 10µs	Using Jig.	-----

1. Set INTELLIGENT PICTURE switch to "OFF" position.
2. Be certain that nothing is connected to the VIDEO OUT terminal.
3. Observe the waveform at TP2J.
4. Adjust VR2A5 so that the amplitude of waveform is 1.0Vp-p.



PCB-MAIN (COMPONENT SIDE)



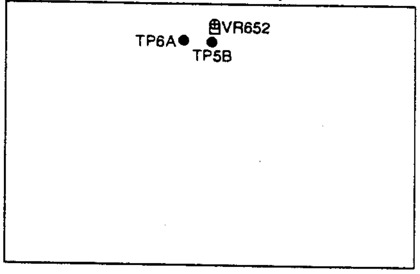
7. N-PAL VCO

Adjustment purpose: Frequency setting of gate of pulse for sampling the burst signal in order to convert NTSC signal to a Pseudo-PAL signal.
Symptom when incorrectly adjusted: No colour signal during N-PAL Playback.

Measuring instrument and condition		VCR set up condition	
Frequency counter		Input signal	-----
Test point	TP6B	Using tape	Alignment tape (NTSC colour bar)
EXT trigger	-----	VCR condition	Playback
Measurement range	-----	Using Jig.	-----

1. Supply a DC5V to TP6A.
2. Observe the freguency at TP6B.
3. Adjust VR652 so that the frequency is 15.73kHz ± 50Hz.
4. Open TP6A.

PCB-MAIN (COMPONENT SIDE)



6. Audio Bias Level

Adjustment purpose: Audio bias level during recording.

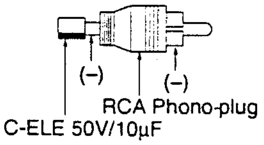
Symptom when incorrectly adjusted: Poor audio response in high frequency area or distortion.

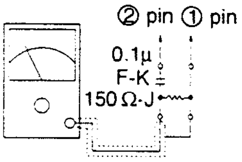
Measuring instrument and condition		VCR set up condition	
Audio tester		Input signal	-----
Test point	TP3X pin ① and pin ②	Using tape	A tape
EXT trigger	-----	VCR condition	SP REC
Measurement range	-----	Using Jig.	High pass filter

1. Insert shorted RCA type phono-plug into the AUDIO IN terminal (L1).
2. Set CHANNEL button to "EXT(L1)" position.
3. Set the MIX switch to "OFF" position.
4. Observe the audio level at pins ① and ② of connector TP3X.
5. Confirm that the monitor TV etc. does not affect the indication of the audio tester and then adjust VR3311 so that the level of 2.6mVr.m.s.

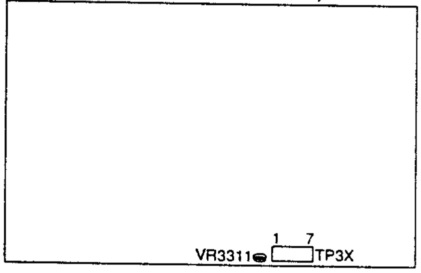
Note 1:
Be careful that the audio tester housing does not touch the VCR chassis.

Note 2:
Do not set the VCR to PLAY mode with the audio tester connected.
(The audio amplifier will be overloaded.)





PCB-Hi-Fi/DEC (COMPONENT SIDE)

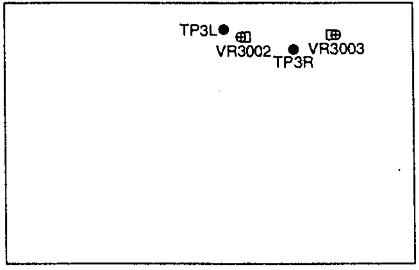


[Hi-Fi Audio Circuit] 9. VCO	**Adjustment purpose:** Set up of FM carrier frequency for Hi-Fi audio. **Symptom when incorrectly adjusted:** Buzz only.

Measuring instrument and condition		VCR set up condition	
Frequency counter		Input signal	-----
Test point	TP3L TP3R	Using tape	A tape
EXT trigger	-----	VCR condition	SP REC
Measurement range	-----	Using Jig.	-----

1. Set CHANNEL button to "EXT(L1)" position.
2. Set MONITOR button on the remote hand unit to "STEREO" mode.
3. Set the MIX switch to "OFF" position.
4. Connect AUDIO IN terminal(L1) to ground(L-CH and R-CH).
5. Observe the frequency at TP3L.
6. Adjust VR3002 so that the frequency is 1.400MHz ± 3kHz.
7. Observe the frequency at TP3R.
8. Adjust VR3003 so that the frequency is 1.800MHz ± 3kHz.

PCB-Hi-Fi/DEC (COMPONENT SIDE)

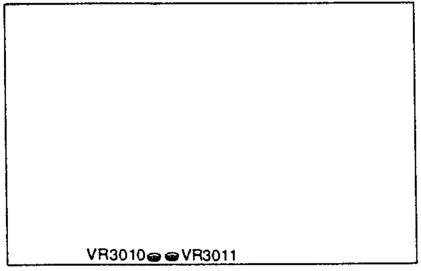


10. EE Level	**Adjustment purpose:** Output level of AUDIO signal at stop mode. **Symptom when incorrectly adjusted:** Too small or too big sound.

Measuring instrument and condition		VCR set up condition	
Audio tester		Input signal	-----
Test point	AUDIO OUT terminal (L-CH, R-CH)	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	-----	Using Jig.	-----

1. Set CHANNEL button to "EXT(L1)" position.
2. Set MONITOR button on the remote hand unit to "STEREO" mode.
3. Set the MIX switch to "OFF" position.
4. Set the REC-LEVEL-VR and REC-BALANCE-VR to centre.
5. Supply the signal(1kHz, –8dBs) to the AUDIO IN terminal (L-CH, R-CH).
6. Observe the audio level at AUDIO OUT terminal (L-CH).
7. Adjust VR3010 so that the audio level is –6dBs.
8. Observe the audio level at AUDIO OUT terminal (R-CH).
9. Adjust VR3011 so that the audio level is –6dBs.

PCB-Hi-Fi/DEC (COMPONENT SIDE)



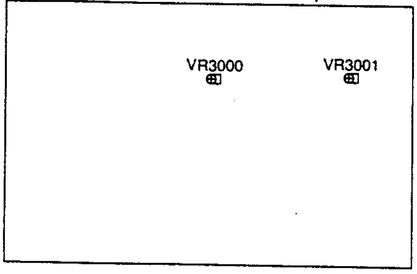
11. FM Frequency Deviation	**Adjustment purpose:** FM Frequency deviation of Hi-Fi sound. **Symptom when incorrectly adjusted:** Too high or too low recording and playback levels of Hi-Fi sound.

Measuring instrument and condition		VCR set up condition	
Audio tester		Input signal	-----
Test point	AUDIO OUT terminal (L-CH, R-CH)	Using tape	Aligment tape (PM6KH3)
EXT trigger	-----	VCR condition	playback
Measurement range	-----	Using Jig.	-----

* This adjustment must follow Item 10 (EE Level).

1. Set the MIX switch to "OFF" position.
2. Set the REC-LEVEL-VR and REC-BALANCE-VR to centre.
3. Observe the audio level at AUDIO OUT terminal (L-CH, R-CH).
4. Adjust VR3000 for the L-CH and VR3001 for the R-CH so that output levels of AUDIO OUT terminals are –6dBm.

PCB-Hi-Pi/DEC (COMPONENT SIDE)

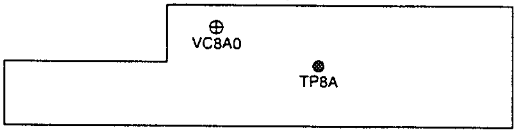


[Timer Circuit] 12. Clock OSC Frequency	**Adjustment purpose:** Accuracy of clock. **Symptom when incorrectly adjusted:** Poor clock accuracy.

Measuring instrument and condition		VCR set up condition	
Frequency counter		Input signal	-----
Test point	TP8A	Using tape	-----
EXT trigger	-----	VCR condition	Stand by
Measurement range	PERIOD mode	Using Jig.	-----

1. Observe the period at TP8A.
2. Adjust VC8A0 so that the period is 5.859375 ±0.000024msec.

PCB-TIMER (COMPONENT SIDE)



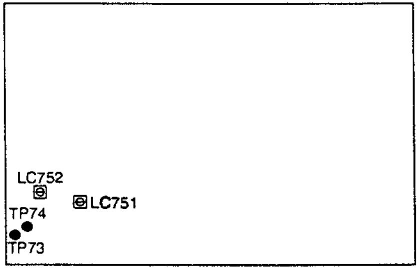
[Dual Audio Circuit] 13. Audio DET Coil (HS-M59(Y) only)	**Adjustment purpose:** Adjustment for audio det coils. **Symptom when incorrectly adjusted:** Sound Signal will distort.

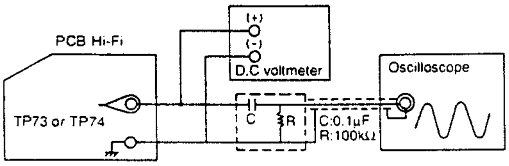
Measuring instrument and oondition		VCR set up condition	
D.C. Voltmeter		Input signal	RF Signal (Normal Sound Signal)
Test point	TP73(TP74)	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	-----	Using Jig.	-----

* Preheat the set for three minutes or more.

1. Supply the normal mode RF signal (400Hz, 30%FM Modulation, 15kHz Deviation).
2. Observe the voltage at TP73.
3. Adjust LC752 so that the D.C voltage at TP73 is 6.0±0.1V.
4. Supply the dual mode RF signal (SUB-CH should be 1kHz).
5. Observe the voltage at TP74.
6. Adjust LC751 so that the D.C voltage at TP74 is 6.0±0.1V.

PCB-Hi-Fi/DEC (COMPONENT SIDE)



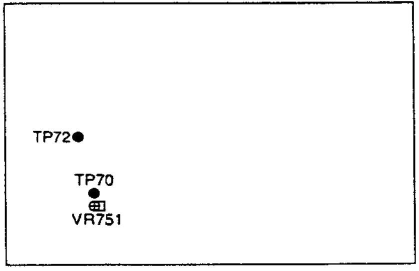


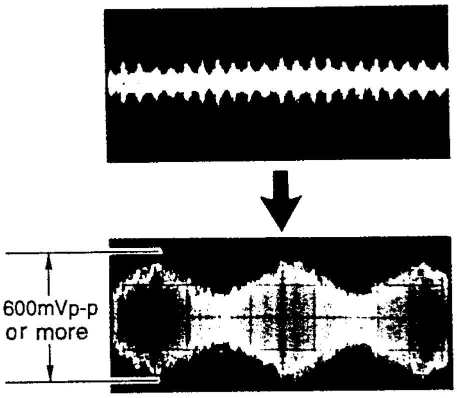
14. Pilot Signal Tuning Frequency (HS-M59(Y) only)	**Adjustment purpose:** The level of pilot signal. **Symptom when incorrectly adjusted:** The pilot signal fails to be detected.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (10:1)		Input signal	RF Signal (Stereo Sound Signal, colour bar)
Test point	TP70	Using tape	-----
EXT trigger	TP72	VCR condition	STOP
Measurement range	DIV 20mV TIM 1ms	Using Jig.	-----

1. Supply the stereo mode RF signal.
2. Observe the waveform at TP70.
3. Adjust VR751 so that the amplitude of the pilot signal becomes maximum.
4. Make sure that the amplitude is at least 600mVp-p.

PCB-Hi-Fi/DEC (COMPONENT SIDE)





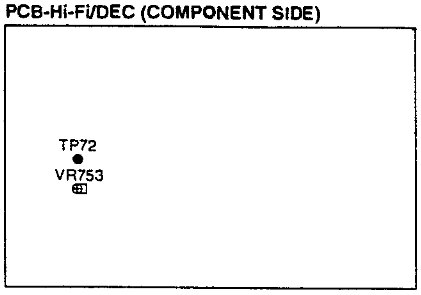
15. Pilot Tone BPF Tuning Frequency of Dual Audio Mode (HS-M59(Y) only)	**Adjustment purpose:** For the detection of dual mode. **Symptom when incorrectly adjusted:** Dual audio fail to be detected.

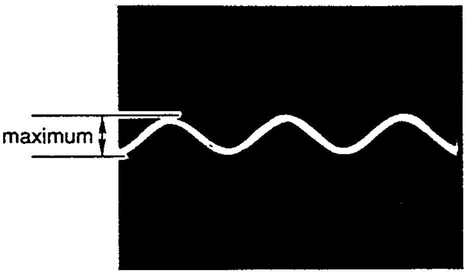
Measuring instrument and condition		VCR set up condition	
Oscilloscope (10:1)		Input signal	RF Signal (Dual Sound Signal)
Test point	TP72	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	DIV 20mV TIM 1ms	Using Jig.	-----

* This adjustment follow Item 14 (Pilot Signal Tuning Frequency).

1. Supply the dual mode RF signal.
2. Observe the waveform at TP72.
3. Adjust VR753 so that the amplitude of the pilot tone(274.1Hz) of dual mode becomes maximum.

PCB-Hi-Fi/DEC (COMPONENT SIDE)





16. Pilot Tone BPF Tuning Frequency of Stereo Mode (HS-M59(Y) only)	**Adjustment purpose:**For the detection of Stereo mode. **Symptom when incorrectly adjusted:**Stereo audio fail to be detected.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (10:1)		Input signal	RF Signal (Stereo Sound Signal)
Test point	TP72	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	DIV 20mV TIM 2ms	Using Jig.	-----

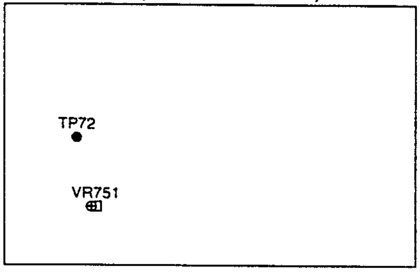
* This adjustment follow Item 14 (Pilot Signal Tuning Frequency).

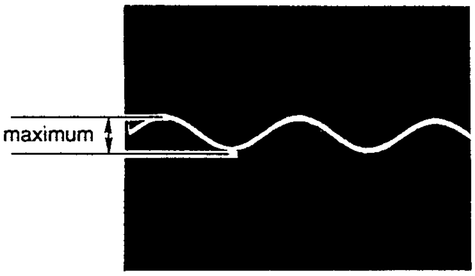
1. Supply the stereo mode RF signal.

PILOT	50% AM MODULATION
RIGHT CH	1kHz, 100% FM MODULATION
LEFT CH	NO MODULATION
RF INPUT	70dBμ (75Ω LOAD)

2. Observe the waveform at TP72.
3. Adjust VR752 so that the amplitude of the pilot tone(117.5Hz) becomes maximum.

PCB-Hi-Fi/DEC (COMPONENT SIDE)



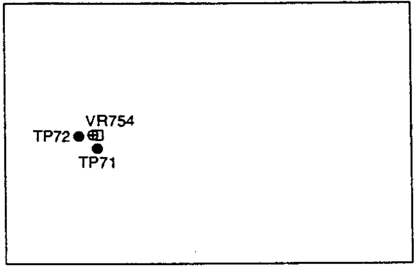


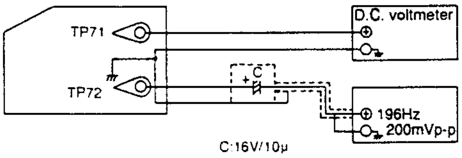
17. VCO Frequency (HS-M59(Y) only)	**Adjustment purpose:** The frequency of VCO. **Symptom when incorrectly adjusted:** Multi signal fail to be detected.

Measuring instrument and condition		VCR set up condition	
Audio Tester, D.C Voltmeter		Input signal	RF Signal (Dual Sound Signal)
Test point	TP71	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	-----	Using Jig.	-----

1. Supply the dual mode RF signal.
2. Supply a sinewave(196Hz, 200mVp-p) to TP72 via a capacitor(10μF, 16V or more).
3. Observe the voltage at TP71.
4. Adjust VR754 so that the D.C voltage at TP71 is 6V.

PCB-Hi-Fi/DEC (COMPONENT SIDE)





18. Channel Separation (HS-M59(Y) only)	**Adjustment purpose:** Positioning of audio separation. **Symptom when incorrectly adjusted:** Mixing audio separation.

Measuring instrument and condition		VCR set up condition	
Oscilloscope (10:1)		Input signal	RF Signal (Stereo Sound Signal)
Test point	TP75	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	DIV 20mV TIM 2ms	Using Jig.	-----

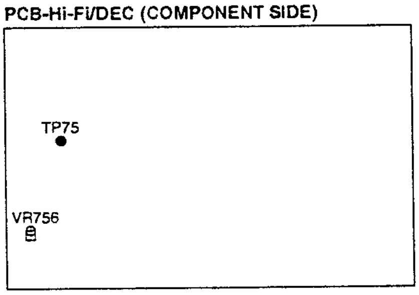
1. Supply the stereo mode RF signal.

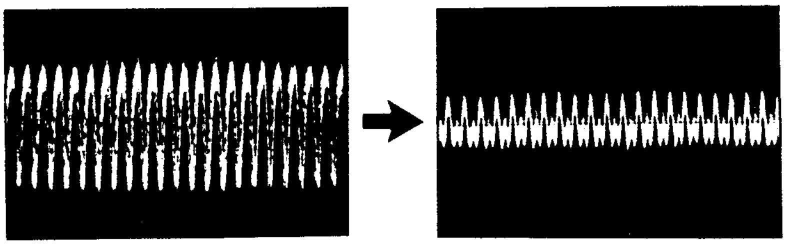
PILOT	50% AM MODULATION
RIGHT CH	1kHz, 100% FM MODULATION
LEFT CH	NO MODULATION
RF INPUT	70dBμ (75Ω LOAD)

2. Observe the waveform at TP75.
3. Adjust VR756 so that the audio out put signal at L-CH becomes minimum.

Note:
This adjustment should be done precisely because it determines the separation.

PCB-Hi-Fi/DEC (COMPONENT SIDE)





[NICAM Circuit]

19. QUASI-SIF (HS-M59(E), (B), (IR) only)

Adjustment purpose: Coincide the free run frequency of the NICAM detector to VIF.

Symptom when incorrectly adjusted: It can not detect NICAM.

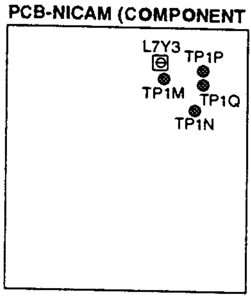
Measuring instrument and condition		VCR set up condition	
D.C. Voltmeter		Input signal	-----
Test point	TP1M	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	-----	Using Jig.	-----

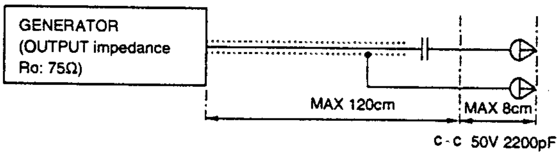
1. Select VHF-Low band.
2. Supply no signal to the set.
3. Short-circuit AGC terminal of the Tuner to ground.
4. Supply 12V to BT terminal of Tuner.
5. Short-circuit TP1N to ground.
6. Take the DC voltage at TP1M.
7. Open-circuit TP1N and ground.
8. Short-circuit TP1P to ground via the capacitor (50V, 2200pF).
9. Supply the sine wave signal (as shown in Table) to TP1Q using the pad (as shown in figure).
10. Adjust L7Y3 so that the DC voltage at TP1M become the same voltage in step 4.

Table

MODEL	Input signal
HS-M59(E)	38.9MHz, 99dBμV
HS-M59(B), (IR)	39.5MHz, 99dBμV

PCB-NICAM (COMPONENT SIOE)





20. Additional Adjustment of Carrier VCXO (HS-M59(E), (B), (IR) only)

Adjustment purpose: Reference frequency for detecting 2nd SIF.

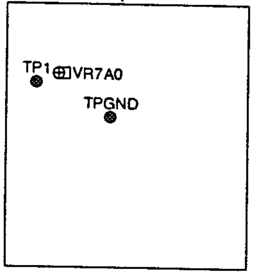
Symptom when incorrectly adjusted: NICAM fails to be detected.

Measuring instrument and condition		VCR set up condition	
Frequency counter		Input signal	RF Signal (Stereo mode)
Test point	TP1	Using tape	-----
EXT trigger	-----	VCR condition	STOP
Measurement range	-----	Using Jig.	-----

1. Observe the frequency at TP1 (Use TPGND for ground).
2. Adjust VR7A0 so that the frequency at TP1 is a value listed in the table below.

MODEL	Carrier frequency
HS-M59(E)	5.85MHz±300Hz
HS-M59(B), (IR)	6.652MHz±300Hz

PCB-NICAM (COMPONENT SIDE)

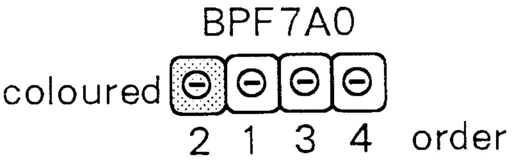


21. BPF (HS-M59(E), (B), (IR) only)	**Adjustment purpose:** Set up the characteristic of BPF of NICAM. **Symptom when incorrectly adjusted:** AUDIO S/N ratio during receiving NICAM deteriorates.

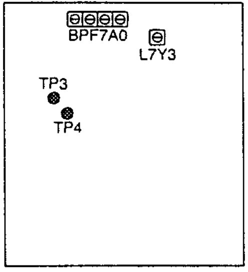
Measuring instrument and condition		VCR set up condition	
Oscilloscope (Probe 10:1)		Input signal	RF signal (stereo sound signal)
Test point	TP3	Using tape	-----
EXT trigger	TP4	VCR condition	STOP
Measurement range	DIV 20mV TIM 1 µs	Using Jig.	-----

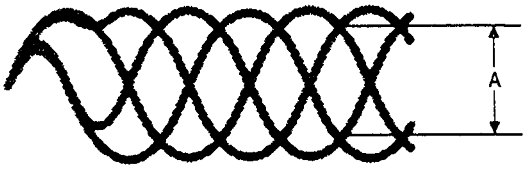
1. Set MONITOR button on the remote hand unit to "STEREO" mode.
2. Observe the waveform at TP3.
3. Adjust the coils of BPF7A0 so that the amplitude of part A becomes maximum.

Note:
Perform the coil adjustment in order with refer to following figure adjust repeatedly at least twice.

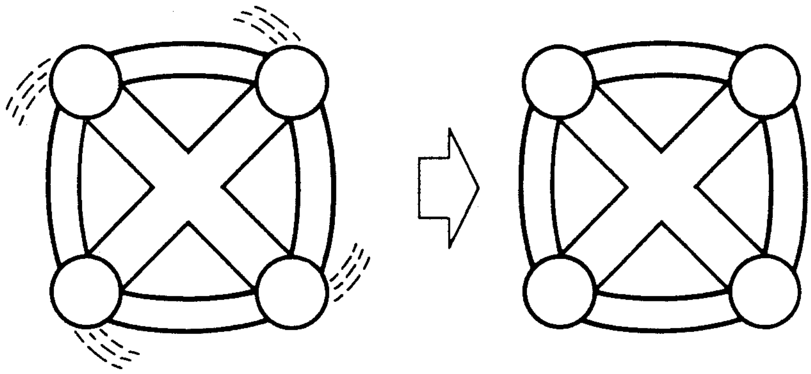


PCB-NICAM (COMPONENT SIDE)





4. Observe the waveform at TP3 and TP4.
5. Set the oscilloscope to X-Y mode.
6. Adjust L7Y3 so that the noise level is disappeared.



MECHANICAL ADJUSTMENT AND REPLACEMENT

1. Cleaning of Deck

The following parts require cleaning whenever serviced to maintain satisfactory performance.

1-1 Video Head

A. Clean the video heads in the following method if dust and other foreign objects on the video heads disturb the normal playback of images:
   Dampen video head cleaning cloth with alcohol. Hold the cloth against the drum and turn the drum slowly counterclockwise to clean.
   Note:
   Do not directly touch the head attached to the upper drum. The head is very hard but brittle to impact, especially in the vertical direction.
   Do not apply force in the vertical direction.

B. Allow residual alcohol to dry thoroughly before running tape. Otherwise, the liquid may stick to and damage the tape.

1-2 Tape Transport(Refer to Fig. 1-1.)

Clean the following parts of the tape transport.

1. Tension regulation arm S
2. Tension arm
3. Supply guide pole
4. FE head
5. Impedance roller
6. Supply guide roller
7. Supply slant pole
8. Upper and lower drum
9. Takeup slant pole
10. Takeup guide roller
11. A/C head
12. Takeup guide pole
13. Pinch roller
14. Capstan shaft
15. Takeup guide arm
16. Tension regulation arm T

A. Clean the tape transport with gauze dampened with alcohol, except the supply guide roller, takeup guide roller and pinch roller. If Guide rollers and pinch roller are stained with dust, clean them with dry gauze or exchange them for new parts.

B. Allow residual alcohol to dry thoroughly before running a tape. Otherwise the liquid may stick to and damage the tape.

1-3 Reel Disk Drive System

Clean the reel disk braking surfaces and the reel belt.

A. Clean the reel disk braking surfaces with gauze dampened alcohol.
   - After the alcohol dries up completely, perform "Adjustment to Back Tension and Tension Position" (Item 3-1).

B. Reel belt is stained with dust, clean it with dry gauze or exchange it for new part.

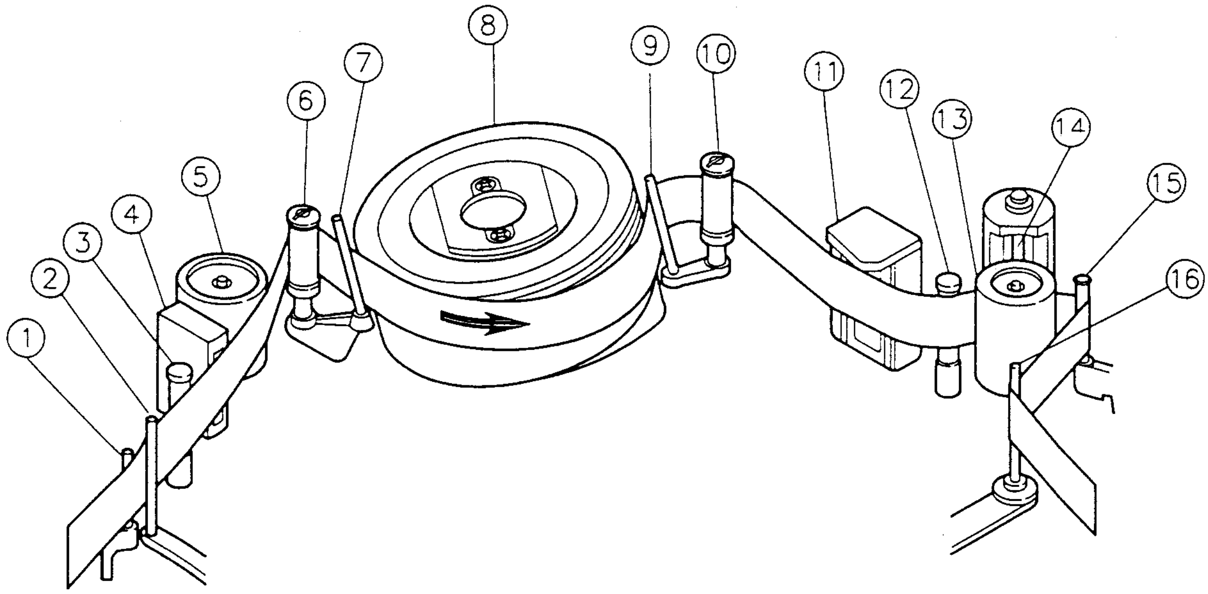


Fig. 1-1

2. Replacement of Major Parts

2-1 Cassette Housing

2-1-1 Removal(Refer to Fig. 2-1-1~2-1-2.)

A. Set the VCR to the eject mode.

B. Remove the top panel, bottom panel, and front panel.

C. Unfasten the snap of the cable holder and remove the cable holder from the cassette housing as shown in Fig.2-1-1.

D. Unscrew four cassette housing fastening screws (ⓐ ~ ⓓ). Raise the cassette housing slowly in the direction shown by the arrow.(Refer to Fig. 2-1-2.)

2-1-2 Installation(Refer to Fig.2-1-1~2-1-3.)

A. Slowly lower the cassette housing onto the main plate of the deck so that the safety lever enters between the insert guide and the shaft as shown in Fig. 2-1-1. Align the two positioning holes(ⓔ , ⓕ) and the two U holes (ⓖ , ⓗ) located on the cassette housing with the matching holes in the deck.

B. In step A above, if the front loading gear of the cassette housing does NOT engage the boss on the main plate, carefully push the gear toward the front of the VCR using a small-diameter screwdriver, as illustrated in Fig. 2-1-3. If the gear still will not engage, rotate the Front Loading Gear a few degrees from below the deck until the gear engages the boss correctly.

C. Fasten the housing to the deck with the four screws(ⓐ ~ ⓓ).(Refer to Fig. 2-1-2.)

2-2 Lock arm and Drive gear

2-2-1 Removal(Refer to Fig. 2-1-3~2-2.)

A. Unfasten four snaps(ⓐ ~ ⓓ)as shown in Fig. 2-1-3, and remove the side plate TU.

B. Turn the FL SW lever clockwise to separate the FL SW lever from the drive gear, and pull the lock arm and drive gear to remove them from the shaft as shown in Fig. 2-2.

2-2-2 Installation(Refer to Fig. 2-1-3~2-2.)

A. Install the drive gear on the shaft as shown in Fig. 2-2.

B. Line the matching mark on the drive gear and beginning of gear section on the lock arm as shown in Fig. 2-2, and install the lock arm.

C. Install the side plate TU to the cassette housing, and secure it with four snaps(ⓐ ~ ⓓ)as shown in Fig. 2-1-3.

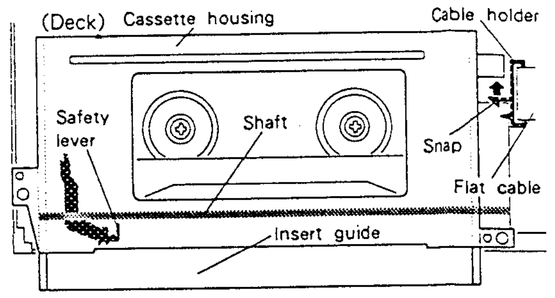

(Deck)
Cassette housing
Cable holder
Safety lever
Shaft
Snap
Flat cable
Insert guide

Fig. 2-1-1

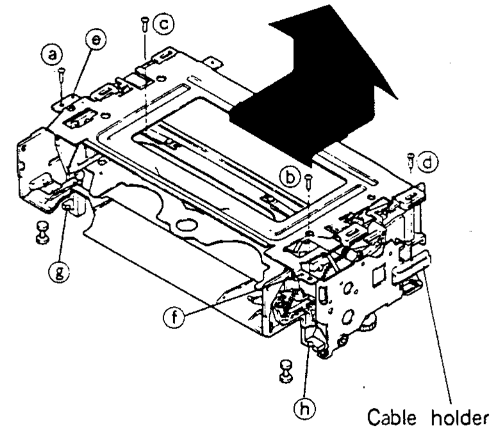

ⓐ
ⓔ
ⓒ
ⓑ
ⓓ
ⓖ
ⓕ
ⓗ
Cable holder

Fig. 2-1-2

F0D002

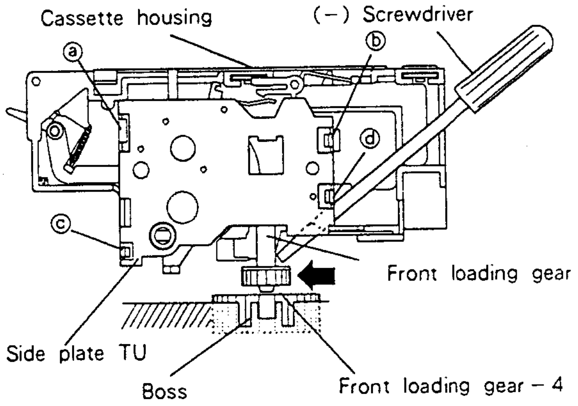

Cassette housing
(−) Screwdriver
ⓐ
ⓑ
ⓓ
ⓒ
Front loading gear
Side plate TU
Boss
Front loading gear − 4

Fig. 2-1-3

F0D003

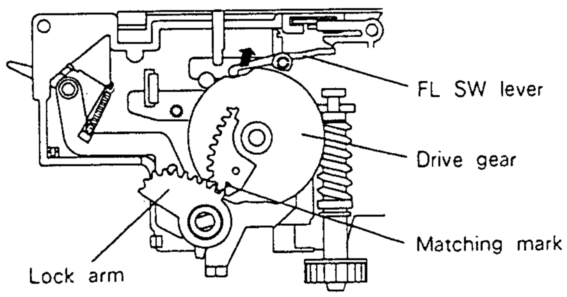

FL SW lever
Drive gear
Matching mark
Lock arm

Fig. 2-2

2-3 Drum Assembly

2-3-1 Removal(Refer to Fig. 2-3-1~2-3-3.)

A. Unscrew the brush fastening screw and remove the brush.(Refer to Fig. 2-3-1.)

B. Unscrew two fastening screws(ⓐ , ⓑ) and remove the PCB-HEAD AMP which is connected to the drum assembly.

Note:

The cable and connector between the drum and head amplifier may be damaged if the cable is pulled strongly, as the cable is short.

Remove the shield cap of the PCB, raise the PCB slightly and disconnect the FPC cable.

(Removal method for the FPC cable connector and stopper is shown in Fig. 2-3-3.)

Disconnect the ground wire and remove the PCB-HEAD AMP.

C. Unscrew three drum fastening screws(ⓒ ~ ⓔ)from the reverse side of the deck.(Refer to Fig. 2-3-2.)

D. Remove the drum assembly by raising it with care not to touch other parts around the drum assembly.

E. Disconnect the connectors from the drum assembly. (Refer to Fig. 2-3-3.)

2-3-2 Installation (Refer to Fig. 2-3-1,2-3-2.)

A. Connect the connectors to a new drum assembly.

B. Place the new drum assembly on the main plate of the deck slowly with care not to touch other parts.

C. Fasten the drum assembly with three fastening screws(ⓒ ~ ⓔ)on the reverse side of the deck. (Refer to Fig. 2-3-2.)

D. Connect the PCB-HEAD AMP to the drum assembly and fasten the PCB with two screws(ⓐ , ⓑ).(Refer to Fig. 2-3-1.)

Note:

Conduct the mechanism interchangeability adjustment outlined in Para.3 to give optimum performance when the drum assembly is replaced.

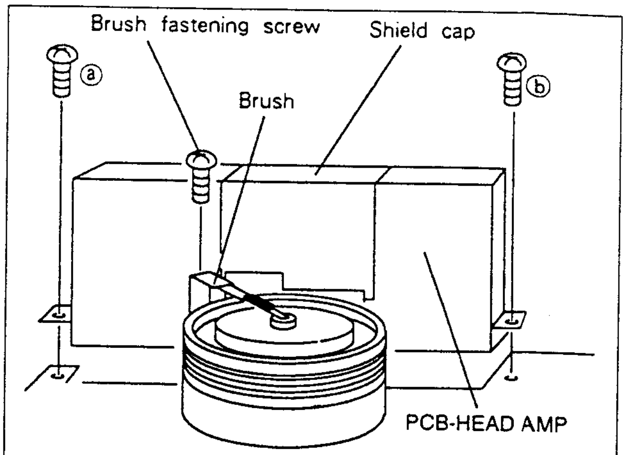


Fig. 2-3-1

F0D007

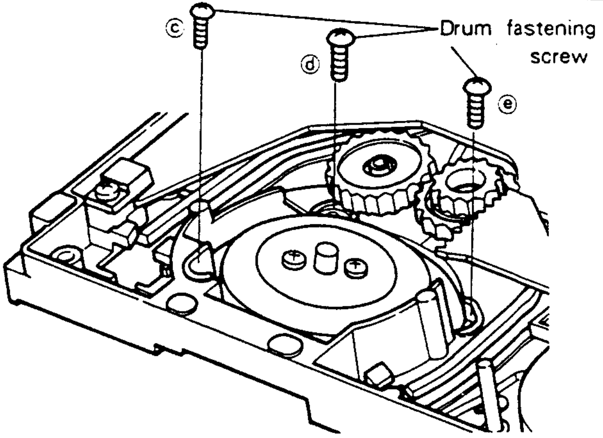


Fig. 2-3-2

F0D008

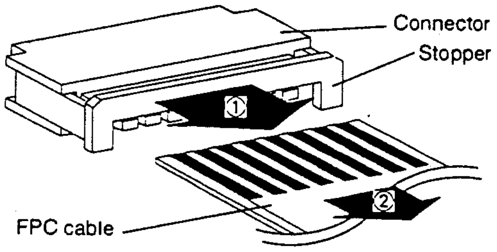


Fig. 2-3-3

F0D009

2-4 Upper Drum

2-4-1 Removal(Refer to Fig. 2-4-1.)

A. Unscrew the brush fastening screw and remove the brush.

B. Unsolder two inside soldered terminals of each head on the upper drum.

C. Unscrew the upper drum fastening screws.

D. Remove the upper drum slowly and carefully.

Note:

If the upper drum is difficult to remove, heat the upper drum fastening screw holes with a soldering iron, and the drum can be easily removed.

2-4-2 Installation(Refer to Fig. 2-4-1.)

Note:

Handle the upper drum carefully as the video heads are fragile.

A. Position the lower drum so that the hole in the shaft faces the operator. Align the upper drum with the lower drum so that the CH1 mark on the upper drum is on the right side, and couple the drums.

B. Fasten the upper drum with two screws.(Tighten the screws alternately.)

C. Solder the terminals not soldered on the upper drum.

D. Clean the video heads as outlined in Para. 1-1.

2-5 Reel Belt(Refer to Fig. 2-5)

A. Remove the reel belt from the capstan motor and the belt pulley.

B. Install a new reel belt.

Note:

Make certain that the new belt is free from grease, before installing.

2-5 Capstan Motor

2-6-1 Removal(Refer to Fig. 2-5, 2-6)

A. Disconnect the flat cable.

B. Remove the reel belt.(Refer to Fig. 2-5.)

C. Remove three fastening screws shown in Fig. 2-6 and remove the capstan motor.

CAUTION:

Restrain the capstan motor as the three screws are removed, since an un-restrained motor may damage other parts of the deck.

When performing removal or installation of the capstan motor, take care that the outside of the rotor's rim is not greased.(Refer to Fig.2-5.) If greasy components are attached on the outside of the rotor's rim, wipe them off with a dry cloth because they may cause defects during special effects playback.

2-6-2 Installation(Refer to Fig. 2-5, 2-6.)

A. Fasten the motor with three fastening screws.(Refer to Fig. 2-6.)

B. Install the reel belt.

C. Connect the flat cable.

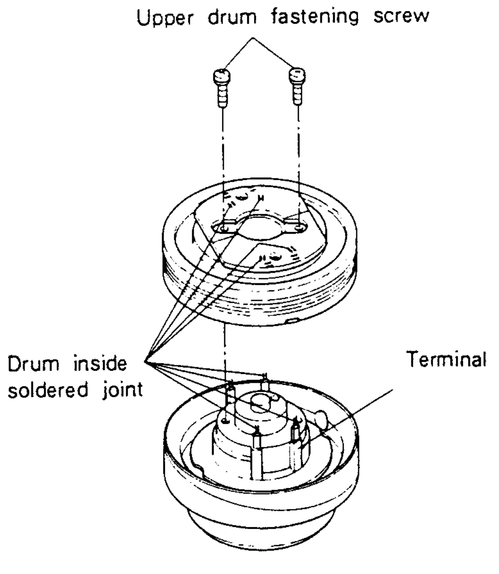


Fig. 2-4-1

F0D010

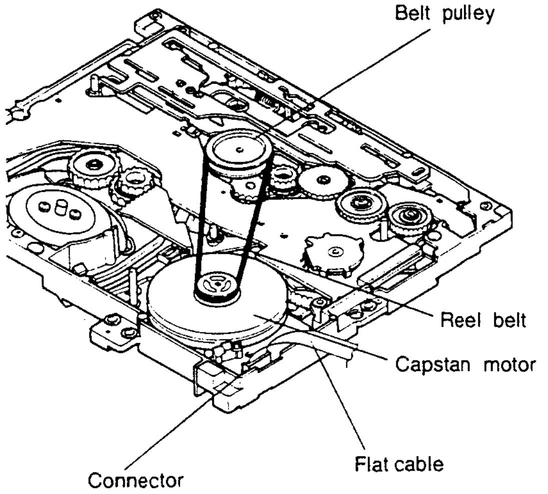


Fig. 2-5

F0D011

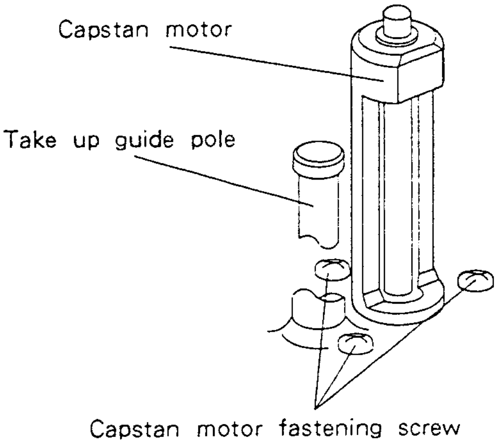


Fig. 2-6

F0D012

2-7 Loading Motor

2-7-1 Removal(Refer to Fig. 2-7-1, 2-7-2.)

A. Set the VCR to the eject mode.
B. Disconnect the wires from the loading motor.
C. Remove two stoppers securing the motor and the motor holder plate.(Refer to Fig. 2-7-2.)
D. Slide the motor and motor holder plate away, and then raise them to remove.
E. Remove the belt-LM from the loading motor and the pulley-L.(TYPE-B only)(Refer to Fig. 2-7-1.)
F. Unscrew two screws and detach the motor holder plate from the motor.
G. Disconnect the coupling from the motor.

2-7-2 Installation(Refer to Fig. 2-7-1~2-7-3.)

A. Fasten the coupling to a new loading motor.(Refer to Fig. 2-7-3.)
B. Fasten the motor holder plate to the motor with two screws.(Refer to Fig. 2-7-1.)
C. Install the belt-LM.(TYPE-B only)
D. Place the motor and motor holder plate in the motor holder to the rest of the deck.
E. Turn the motor shaft so that the coupling on the loading motors matches the worm gear of the motor holder. Slide the loading motor forward and secure it with the stoppers.
F. Solder the leads to the loading motor. (Brown lead wire to the positive terminal and red lead wire to the negative terminal.)

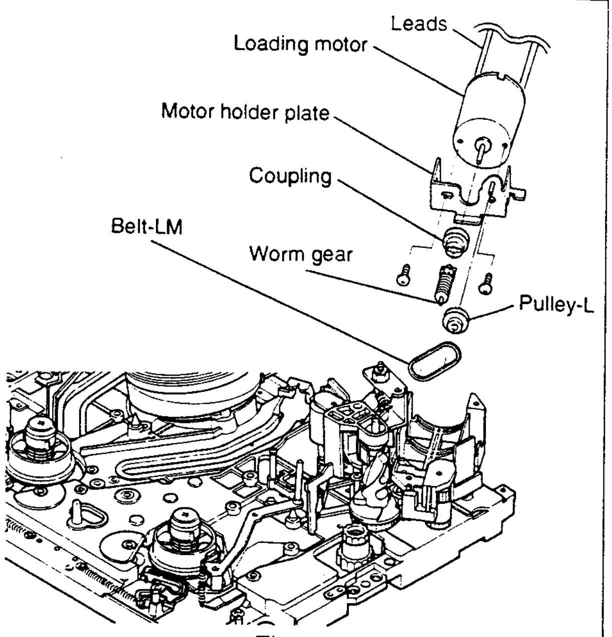

Leads
Loading motor
Motor holder plate
Coupling
Belt-LM
Worm gear
Pulley-L

Fig. 2-7-1

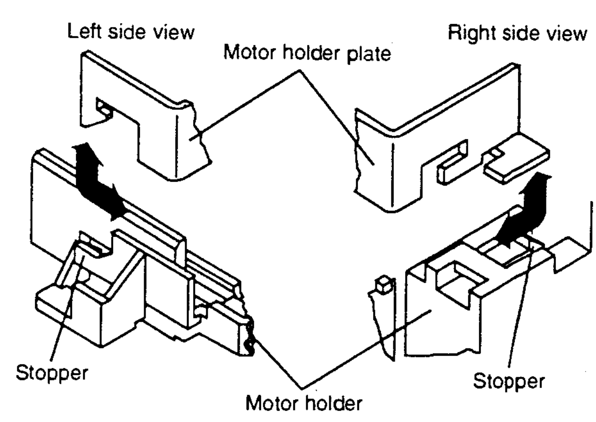

Left side view
Motor holder plate
Right side view
Stopper
Stopper
Motor holder

Fig. 2-7-2

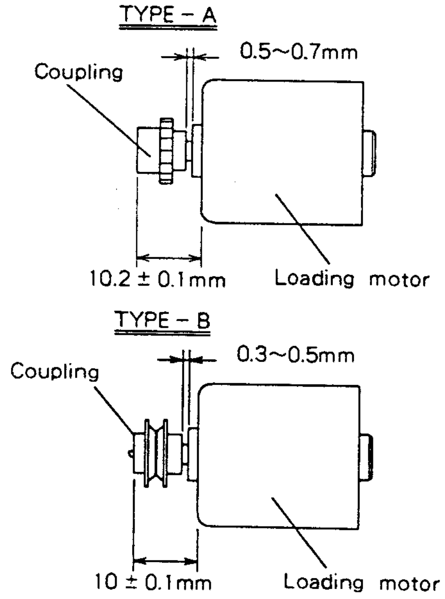

TYPE – A
0.5~0.7mm
Coupling
10.2 ± 0.1mm
Loading motor
TYPE – B
0.3~0.5mm
Coupling
10 ± 0.1mm
Loading motor

Fig. 2-7-3

2-8 Pinch Roller

2-8-1 Removal(Refer to Fig. 2-8-1, 2-8-2.)

A. Set the VCR to the eject mode.

B. Remove the pinch roller arm cap and the grip ring which secures the pinch roller arm assembly.(Refer to Fig. 2-8-1.)

C. Pull the pinch roller arm assembly upwards to remove.

D. Remove the pinch roller cap from the pinch roller arm, and remove the pinch roller. (Refer to Fig. 2-8-2.)

2-8-2 Installation(Refer to Fig. 2-8-1,2-8-2.)

A. Assemble the pinch roller cap and the pinch roller to the pinch roller arm by exercising care with the installation angle of the pinch roller cap and the marking of the Pinch Roller. (Refer to Fig. 2-8-2.)

B. Assemble the pinch roller assembly to the shaft on the main plate.(Refer to Fig. 2-8-1.)

C. Secure the pinch roller arm assembly with the pinch roller arm cap and the grip ring.

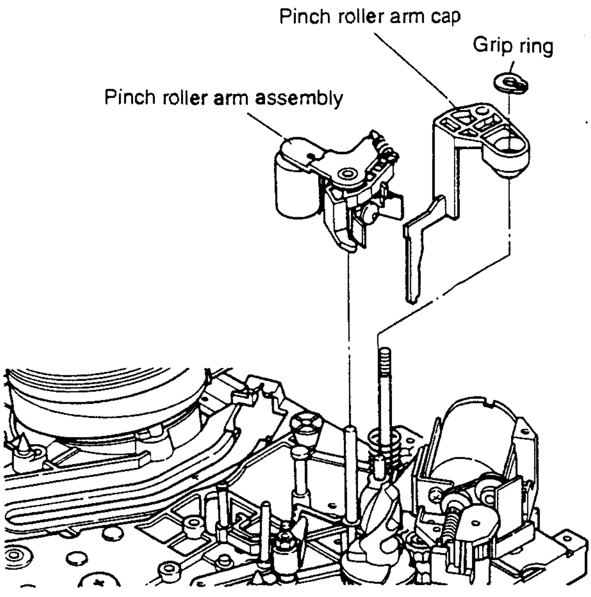

Pinch roller arm cap
Grip ring
Pinch roller arm assembly

Fig. 2-8-1

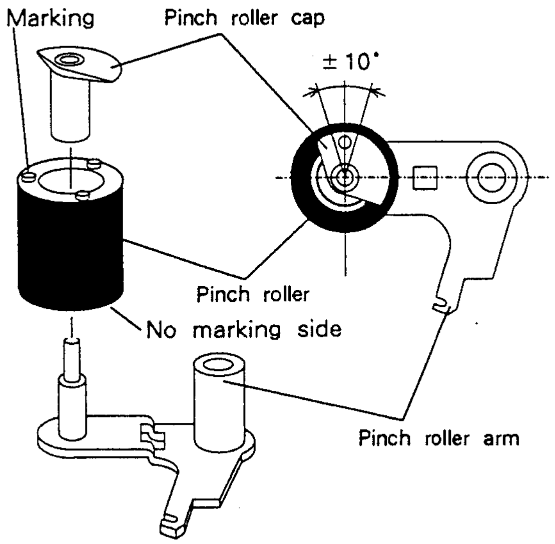

Marking
Pinch roller cap
± 10°
Pinch roller
No marking side
Pinch roller arm

Fig. 2-8-2

F0D017

2-9 Mode Switch

Note:

Replace the mode switch with the VCR in the eject mode.

2-9-1 Removal(Refer to Fig. 2-9-1)

A. Unsolder the five soldered joints of the mode switch from the PCB-DECK.

B. Unfasten two catches fastening the switch to the PCB-DECK assembly. (Exercise care as the catches may be broken off.)

C. Remove the mode switch slowly while insuring that the soldered joints are all unsoldered.

2-9-2 Installation(Refer to Fig. 2-9-1,2-9-2.)

A. Line the matching marks of the mode switch. (Refer to Fig. 2-9-2.)

B. Finely adjust the mode switch so that continuity at each terminal shall be as given in the illustration.

C. Fasten the switch to the PCB-DECK with care so that the switch does not turn, and secure with two catches.(Refer to Fig. 2-9-1.)

D. Solder the five terminals which connect the mode switch to the PCB-DECK assembly.

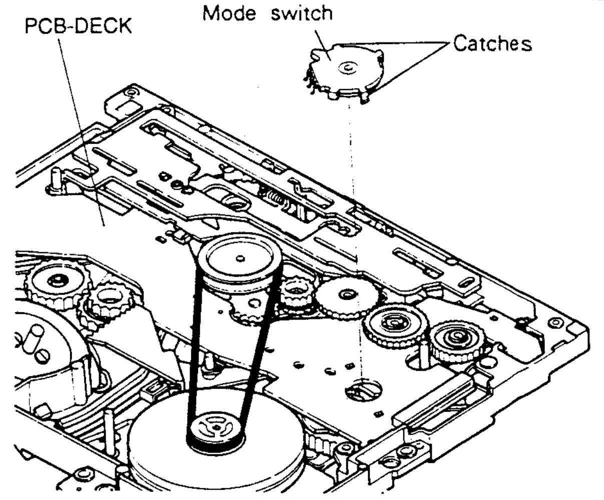

PCB-DECK
Mode switch
Catches

Fig. 2-9-1 F0D018

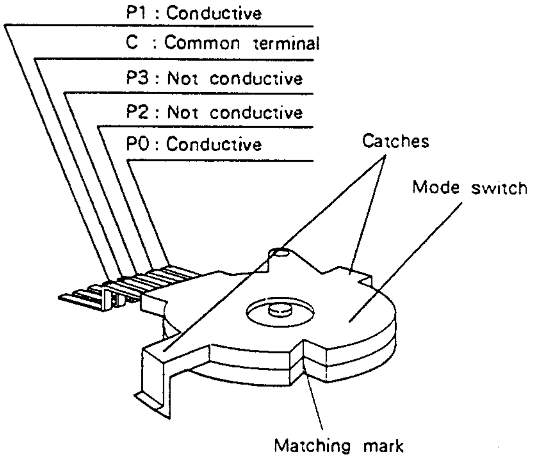

P1 : Conductive
C : Common terminal
P3 : Not conductive
P2 : Not conductive
P0 : Conductive
Catches
Mode switch
Matching mark

Fig. 2-9-2 F0D019

2-10 Supply Reel Disk

2-10-1 Removal (Refer to Fig. 2-10-1~2-10-3.)

A. Remove the cassette housing as in Para. 2-1-1.

B. Unscrew the screw ⓐ which fastens the T band holder. (Refer to Fig. 2-10-1.)

C. Unfasten the catch of the T band holder from the main plate with a small screw driver etc. as shown in Fig. 2-10-2. Raise and remove the T band holder with care not to score or dirty the tension brake belt.

D. Detach the tension spring from the tension arm and the tension lever.(Refer to Fig. 2-10-1.)

E. Remove the grip ring ⓑ which secures the tension arm. Raise the tension arm upward to remove it from the shaft.

F. Detach the tension regulation spring S from the tension regulating arm S and the tension lever.

G. Detach the safety lever spring from the safety lever and the tension lever.

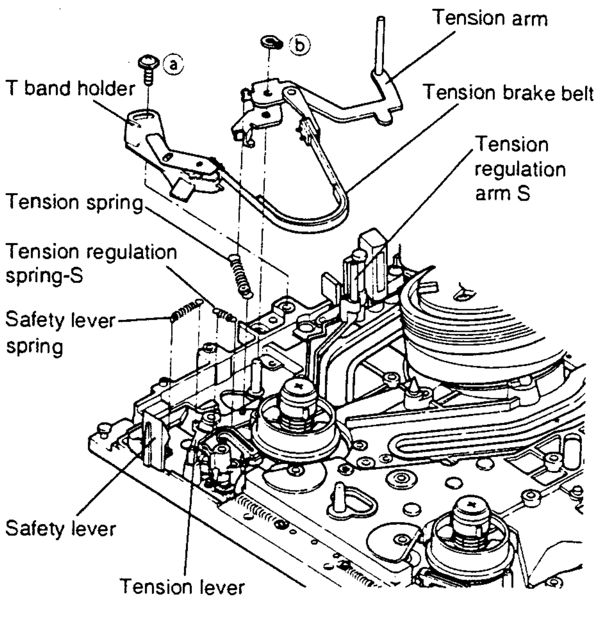

Tension arm
ⓑ
ⓐ
T band holder
Tension brake belt
Tension regulation arm S
Tension spring
Tension regulation spring-S
Safety lever spring
Safety lever
Tension lever

Fig. 2-10-1

H. Raise the tension lever avoiding the main brake S and remove the lever from the shaft.(Refer to Fig. 2-10-3.)

I. Raise the tension regulation arm S and remove it from the shaft.

J. While turning the main brake S slightly clockwise to separate the brake from the supply reel disk, and raise the supply reel disk to remove it from the shaft.(Refer to Fig. 2-10-3.)

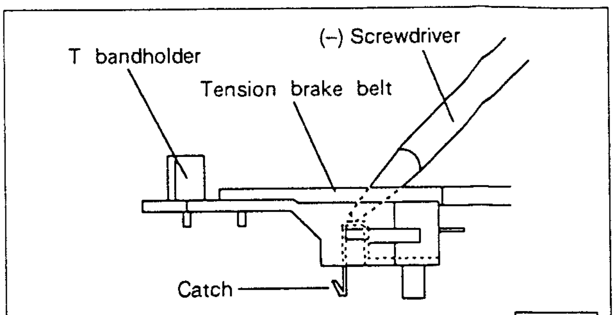

(–) Screwdriver
T bandholder
Tension brake belt
Catch
F0D021

Fig. 2-10-2

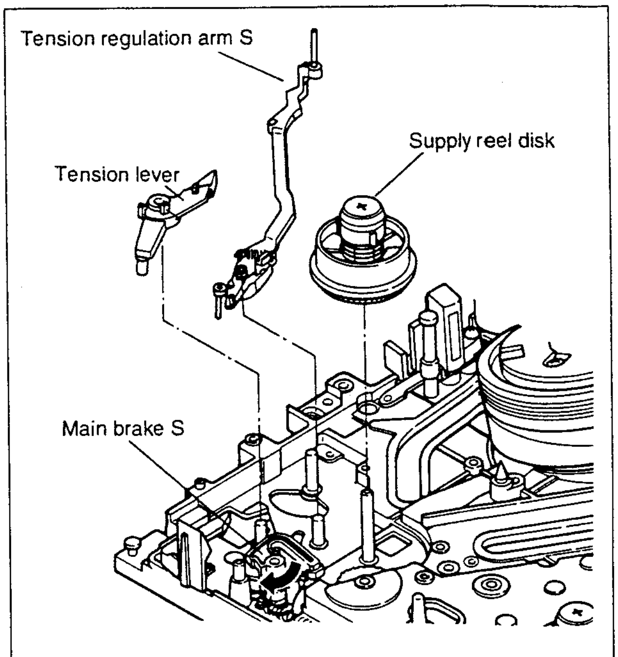

Tension regulation arm S
Supply reel disk
Tension lever
Main brake S

Fig. 2-10-3

2-10-2 Installation(Refer to Fig. 2-10-4~2-10-7.)

A. Turn the main brake S slightly clockwise to separate it from the supply reel disk shaft, and mount the supply reel disk on the shaft so that the reel gear meshes with the gear of the supply reel disk.

B. Assemble the tension regulation arm S to the shaft.

C. Assemble the tension lever to the shaft avoiding the main brake S.

Note:

Install the tension lever so that the pin at the lower part of the lever shall be in front of the slot in the main plate(viewing the front).

D. Fasten the safety lever spring to the safety lever and the tension lever.

E. Fasten the tension regulation spring S to the tension regulation arm S and the tension lever.

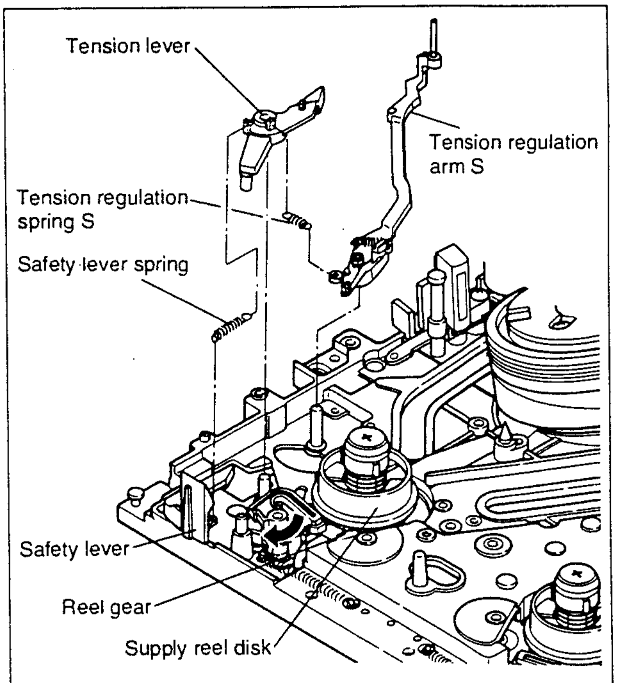

Tension lever
Tension regulation arm S
Tension regulation spring S
Safety lever spring
Safety lever
Reel gear
Supply reel disk

Fig. 2-10-4

F. Assemble the tension arm to the shaft and secure the arm with the grip ring ⓑ.(Refer to Fig. 2-10-5.)

G. Fasten the tension spring to the tension arm and the tension lever.(Refer to Fig. 2-10-5.)

H. Assemble the T band holder to the main plate with care not to score or dirty the tension brake belt, and secure the holder with the screw ⓐ lightly.(Refer to Fig. 2-10-5.)

Note:

In the assembly of the T band holder, make certain that the hook of the holder positively engages with the reverse side of the main plate.

If the hook is difficult to engage with the main plate, push the hook lightly with a small screw driver etc.(Refer to Fig. 2-10-2.)

I. Separate the main brake S and the tension regulation arm S from the supply reel disk and make certain that the disk turns freely.(Refer to Fig. 2-10-3.)

J. Place the reel disk height adjusting jig(Part Number 859C342O20) in the reference position on the main plate.(Refer to Fig. 2-10-6.)

K. Slowly turn the jig about point A and make sure that the height of the supply reel disk flange agrees with the point B on the supply disk adjusting side of the jig (marked SP).(Refer to Fig. 2-10-7.)

L. If the height of the disk is not satisfactory, hold the disk so that it does not turn, and turn the height adjusting screw at the top of the disk to adjust the height. (Refer to Fig. 2-11-3.)

  A) Turn the screw clockwise if the measured height is low.

  B) Turn the screw counterclockwise if the measured height is high.

M. On completion of adjustment, lock the height adjusting screw by burning it with the tip of a hot iron.

N. Install the cassette housing as in Para. 2-1-2.

O. Adjust back tension and tension pole position as outlined in Para. 3-1.

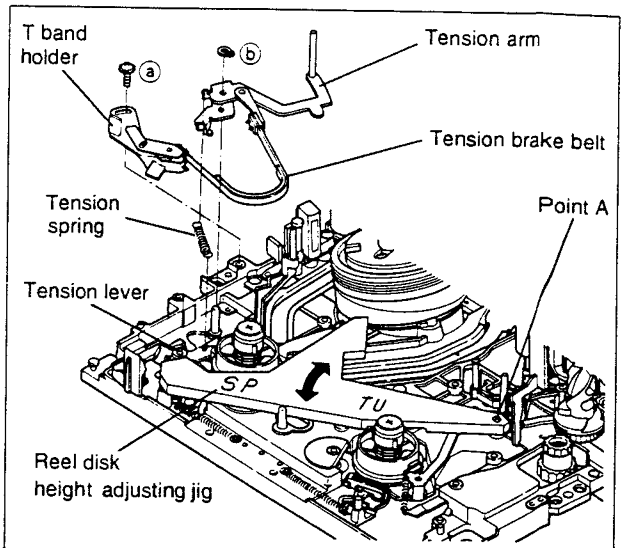

T band holder
ⓐ
ⓑ
Tension arm
Tension brake belt
Point A
Tension spring
Tension lever
SP
TU
Reel disk height adjusting jig

Fig. 2-10-5

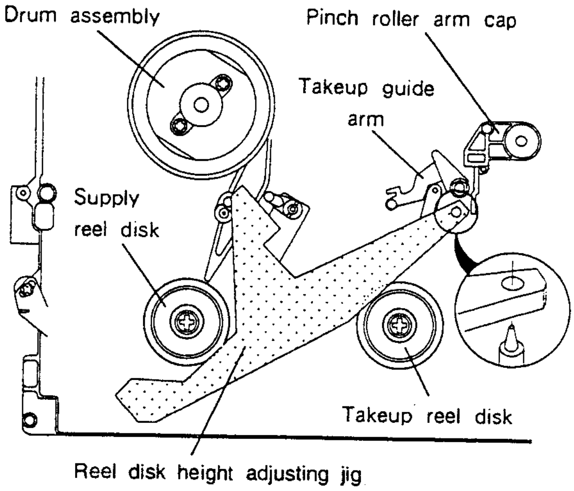

Drum assembly
Pinch roller arm cap
Takeup guide arm
Supply reel disk
Takeup reel disk
Reel disk height adjusting jig

Fig. 2-10-6 F0D025

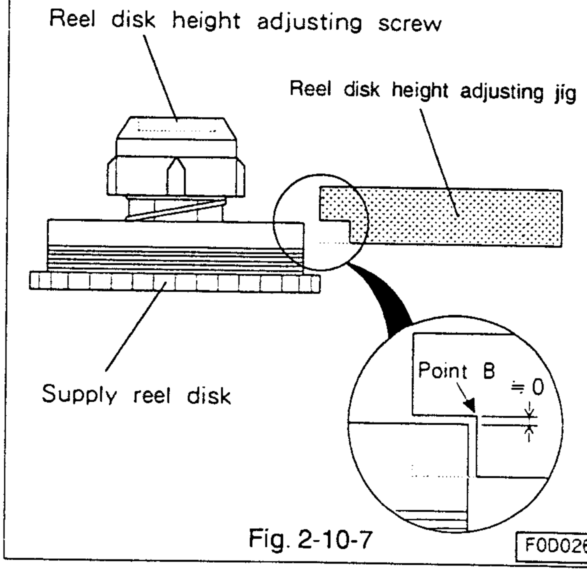

Reel disk height adjusting screw
Reel disk height adjusting jig
Supply reel disk
Point B
≒0

Fig. 2-10-7 F0D026

2-11 Takeup Reel Disk

2-11-1 Removal(Refer to Fig. 2-11-1.)

A. Remove the cassette housing as in Para. 2-1-1.

B. Detach the spring RS and the tension regulation spring T from the tension regulation arm T and the lever RS.

C. Remove the cut washer which fastens the tension regulation arm T.

D. Turn the takeup guide arm slightly clockwise and raise the tension regulation arm T to remove it from the shaft.

E. Turn the main brake slightly counter-clockwise to separate the brake from the takeup reel disk and raise the disk upwards to remove it from the shaft.

2-11-2 Installation(Refer to Fig. 2-11-2, 2-11-3.)

A. Turn the main brake T slightly counter-clockwise to release the takeup reel disk shaft. Slip the takeup reel disk onto the shaft so that the gear of the takeup reel shall mesh with the reel gear.(Refer to Fig. 2-11-2.)

B. Turn the takeup guide arm slightly clockwise and install the tension regulation arm T to the shaft. Secure the arm with a cut washer.

C. Fasten the tension regulation spring T and the spring RS to the tension regulation arm T and the lever RS.

D. Separate the main brake T and the tension regulation arm T from the takeup reel disk and make certain that the takeup reel disk turns freely.

E. Place the reel disk height adjusting jig(Part Number 859C342020) in the reference position on the main plate. (Refer to Fig. 2-10-6.)

F. Turn the jig slowly about the point A towards the takeup reel disk to make certain that the height of the disk flange agrees with the point B on the takeup side of the jig(marked TU). (Refer to Fig. 2-11-3.)

G. If the height of the disk is not satisfactory, hold the disk so that it shall not turn, and turn the height adjusting screw at the top of the disk to adjust the height. (Refer to Fig. 2-11-3.)

A) Turn the screw clockwise if the measured height is low.

B) Turn the screw counterclockwise if the measured height is high.

H. On completion of height adjustment, lock the adjusting screw by burning it with the tip of a hot iron.

I. Install the cassette housing as in Para. 2-1-2.

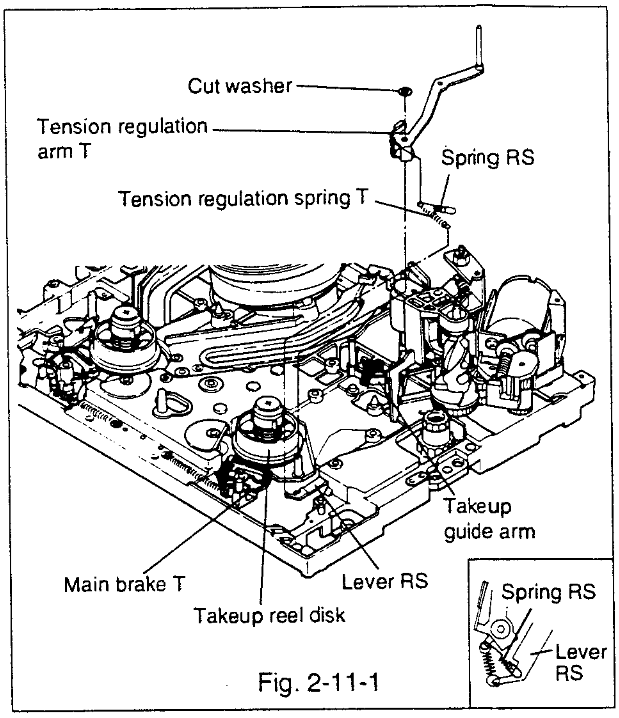

Cut washer
Tension regulation arm T
Spring RS
Tension regulation spring T
Takeup guide arm
Main brake T
Lever RS
Takeup reel disk
Spring RS
Lever RS

Fig. 2-11-1

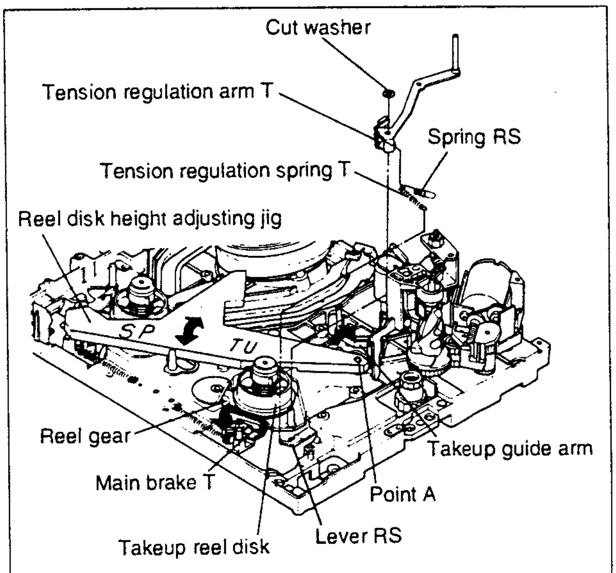

Cut washer
Tension regulation arm T
Spring RS
Tension regulation spring T
Reel disk height adjusting jig
SP
TU
Reel gear
Takeup guide arm
Main brake T
Point A
Takeup reel disk
Lever RS

Fig. 2-11-2

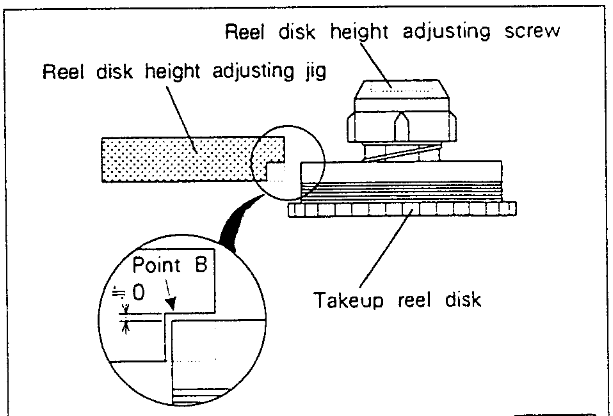

Reel disk height adjusting screw
Reel disk height adjusting jig
Point B
≒0
Takeup reel disk

Fig. 2-11-3

F0D029

2-12 A/C Head

2-12-1 Removal (Refer to Fig. 2-12-1, 2-12-2.)

A. Disconnect the connector from the PCB-A/C HEAD.(Refer to Fig. 2-12-1.)
B. Remove the nut which fastens the A/C head assembly.
C. Raise upwards and remove the A/C head assembly from the shaft by paying attention to the A/C arm spring which turns the A/C head assembly clockwise.
D. Remove three A/C head fastening screws(ⓐ ~ ⓒ) and the A/C spring shown in Fig. 2-12-2, and remove the A/C head from the A/C arm.
E. Unsolder the PCB-A/C HEAD from the A/C head.(Refer to Fig. 2-12-2.)

2-12-2 Installation(Refer to Fig. 2-12-1~2-12-3.)

A. Solder the PCB-A/C HEAD to the A/C head. (Refer to Fig. 2-12-2.)
B. Fasten the A/C head to the A/C arm with three screws(ⓐ ~ ⓒ) and the A/C spring.
Note:
Install the A/C head to the A/C arm so that the base surface of the A/C head shall be parallel to the A/C arm, and their spacing and the A/C head installation screwⓒ height shall be as specified in Fig. 2-12-3.
C. Assemble the A/C head assembly to the shaft while turning the A/C arm spring counter-clockwise about 60° (Refer to Fig. 2-12-1.)
D. Tighten the A/C head assembly fastening nut so that the base surface of the A/C head shall be about 7mm above the main plate surface.(Refer to Fig. 2-12-3.)
E. Plug in the connector to the PCB-A/C HEAD. (Refer to Fig. 2-12-1.)
F. Conduct the A/C head adjustment and the phase adjustment as outlined in Para. 3-3 and 3-4.

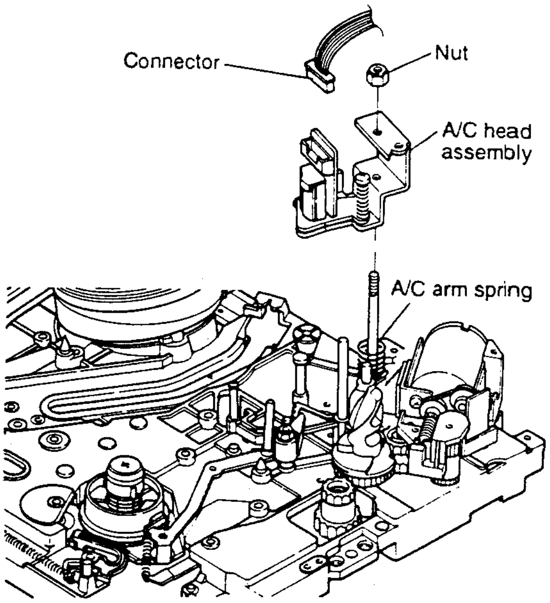

Connector
Nut
A/C head assembly
A/C arm spring

Fig. 2-12-1

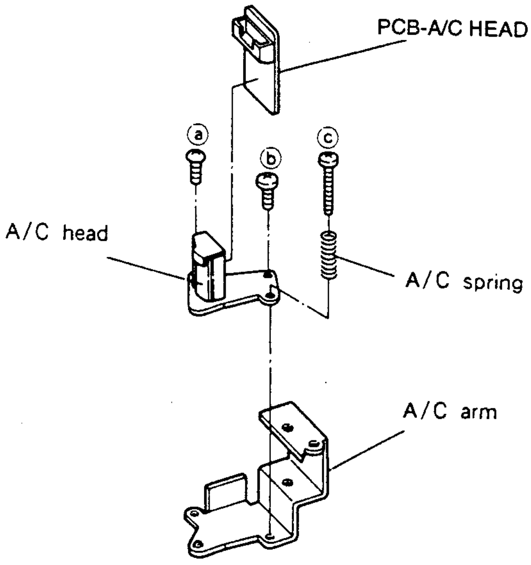

PCB-A/C HEAD
ⓐ
ⓑ
ⓒ
A/C head
A/C spring
A/C arm

Fig. 2-12-2

F0D031

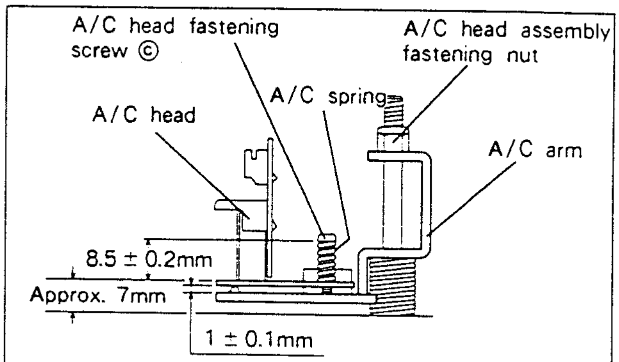

A/C head fastening screw ⓒ
A/C head assembly fastening nut
A/C spring
A/C head
A/C arm
8.5 ± 0.2mm
Approx. 7mm
1 ± 0.1mm

Fig. 2-12-3

F0D032

2-13 Take Up Guide Arm

2-13-1 Removal(Refer to Fig. 2-13-1.)

A. Set the VCR in the eject mode.

B. Remove the pinch roller arm assembly.
(Refer to Para. 2-8 " Pinch Roller ")

C. Raise and separate the pinch roller cam and the TU-G gear arm from the shaft at the same time.

D. Remove the takeup guide arm fastening nut. Raise and separate the takeup guide arm from the shaft with care not to lose the TU-G spring.

2-13-2 Installation(Refer to Fig. 2-13-1~2-13-3.)

A. Install the TU-G spring and the takeup guide arm so that one end of the TU-G spring is fastened to the takeup guide arm and the other end is fastened to the hook of the main plate. Secure them with the fastening nut temporarily.

B. Place the reel disk height adjusting jig(for the F deck) in the reference position on the main plate(Refer to Fig. 2-10-6). Insure the takeup guide arm is level with point B of the height adjusting jig(for the E deck). (Refer to Fig. 2-13-2.)

C. Turn the takeup tension lever fully clockwise as shown in Fig. 2-13-1.

D. Line the matching mark on the TU-G gear arm and beginning of gear section on the takeup guide arm, and line the matching mark on the pinch roller cam and center of gear on the joint gear as shown in Fig. 2-13-3, and install the pinch roller cam and the TU-G gear to the shaft at the same time.

E. Assemble the pinch roller arm assembly to the shaft on the main plate.(Refer to Fig. 2-13-1.)

F. Secure the pinch roller arm assembly with the pinch roller arm cap and the grip ring.

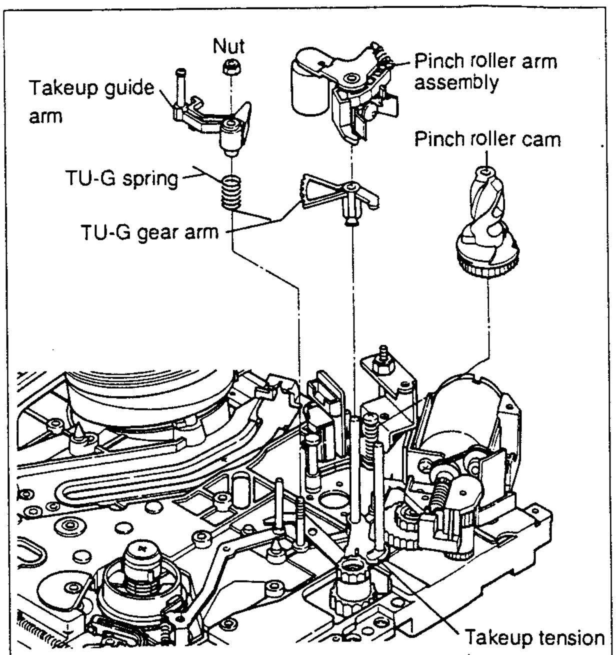

Nut
Takeup guide arm
Pinch roller arm assembly
Pinch roller cam
TU-G spring
TU-G gear arm
Takeup tension lever

Fig. 2-13-1

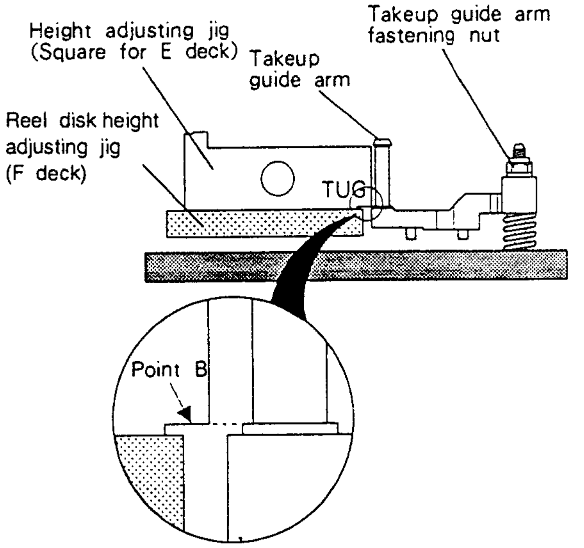

Height adjusting jig (Square for E deck)
Takeup guide arm
Takeup guide arm fastening nut
Reel disk height adjusting jig (F deck)
TUG
Point B

Fig. 2-13-2

F0D034

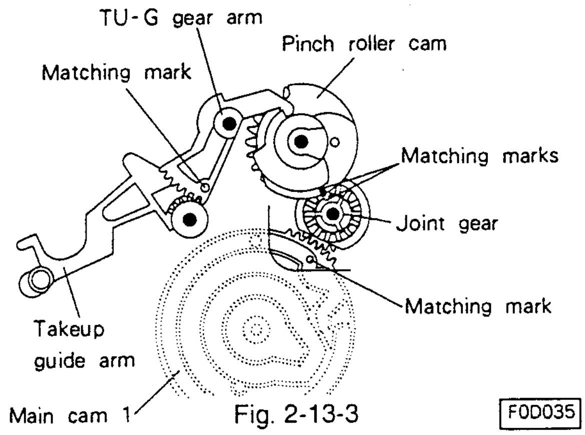

TU-G gear arm
Pinch roller cam
Matching mark
Matching marks
Joint gear
Matching mark
Takeup guide arm
Main cam 1

Fig. 2-13-3

F0D035

2-14 PCB-Deck(Printed Circuit Board)

2-14-1 Removal(Refer to Fig. 2-14-1, 2-14-2.)

A. Detach the capstan brake spring from the capstan brake and the loading gear arm.(Refer to Fig. 2-14-1.)

B. Remove the reel belt from the bottom of the deck.(Refer to Fig. 2-5.)

C. Detach two grip rings ⓕ shown in Fig. 2-14-2 and remove the loading gear arm.

D. Unsolder the terminals of the FE head.(Refer to Fig. 2-14-1.)

E. Unfasten the catches and remove the F/L gear 2, 3 and 4.(Refer to Fig. 2-14-2.)

F. Remove grip ring ⓖ and cut washer ⓗ, and unfasten three catches shown in Fig. 2-14-3 to remove the cam plate B.(Refer to Fig. 2-14-2.)

G. Unscrew five fastening screws(ⓐ ~ ⓔ)and remove the PCB-DECK.(Refer to Fig. 2-14-2.)

2-14-2 Installation(Refer to Fig. 2-14-1~2-14-3.)

A. Make certain that the mode switch is set to the eject position.(Refer to section 2-9.) Fasten the PCB-DECK with five screws and solder the FE head terminals. (Refer to Fig. 2-14-1.)

Note:

The safety lever is normally held leftward with a spring. Pull the safety lever forwards and install the PCB-DECK.

B. Install the cam plate B by paying attention to the pin(ⓐ ~ ⓖ) positions shown in Fig. 2-14-3, and secure the plate with three catches, grip ring ⓖ and cut washer ⓗ.

C. Line the matching mark on the loading arm T and that on the loading gear arm as shown in Fig. 2-14-3, and assemble the loading gear arm so that the pin of the loading gear arm shall enters the groove of the main cam 2. Secure the loading gear arm with two grip rings ⓕ.

D. Assemble the F/L gear 2, 3, and 4 to the shafts.(Refer to Fig. 2-14-2.)

E. Install the reel belt.(Refer to Fig. 2-5.)

F. Fasten the capstan brake spring to the capstan brake and the loading gear arm from the top side of the deck.(Refer to Fig. 2-14-1.)

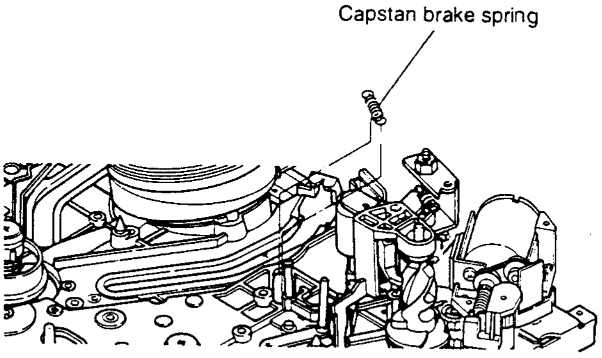

Capstan brake spring

Fig. 2-14-1

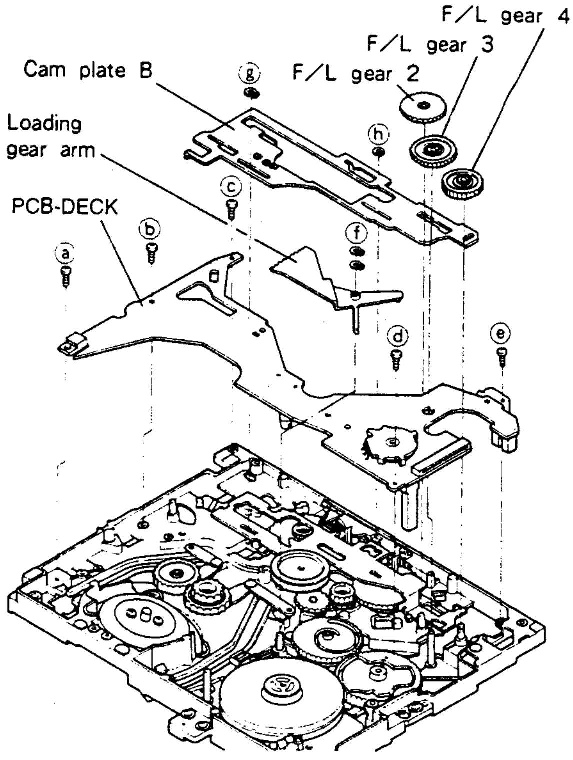

F/L gear 4
F/L gear 3
Cam plate B
ⓖ
F/L gear 2
Loading gear arm
ⓗ
ⓒ
PCB-DECK
ⓑ
ⓐ
ⓕ
ⓓ
ⓔ
F0D037

Fig. 2-14-2

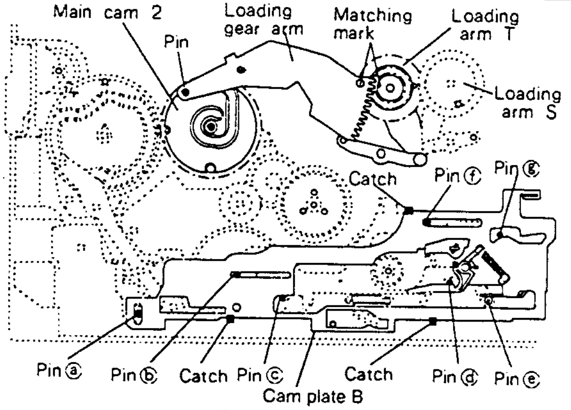

Main cam 2
Pin
Loading gear arm
Matching mark
Loading arm T
Loading arm S
Catch
Pin ⓕ
Pin ⓖ
Pin ⓐ
Pin ⓑ
Catch
Pin ⓒ
Catch
Pin ⓓ
Pin ⓔ
Cam plate B
F0D038

Fig. 2-14-3

2-15 Positioning and Installation Sequence of Parts Around Main Cam 1 (Bottom Side of Deck) (Refer to Fig. 2-15-1~2-15-6.)

Note:

Set the VCR to the eject mode to install the main cam 1 and its peripheral parts.

A. Line the positioning hole in lever RS to that of the main plate, and assemble lever RS to the shaft.(Refer to Fig. 2-15-1.)

B. Line the positioning hole in lever C with that of the main plate, and assemble lever C to the shaft.

C. Take care not to move the lever RS and lever C, assemble the main cam 1 to the shaft by lining the matching mark of the joint gear with the positioning hole of main plate. Secure the main cam 1 with the grip ring.(Refer to Fig. 2-15-2.)

Note:

The pins of the lever RS and the lever C enter the groove of the main cam 1 when the levers are lined with the positioning holes.

Make certain that the pins of the levers enter the groove of the main cam 1.

D. Assemble the thrust washer to the pin ⓒ shown in Fig. 2-15-2, and install the cam plate C so that the corresponding positions of the plate match the pins(ⓐ ~ ⓖ).

E. Fasten cam spring C to cam plate C and the cam plate holder.(Refer to Fig. 2-15-2.)

F. Assemble lever B to the shaft so that the pin of the lever shown in Fig. 2-15-3 enters the groove of the main cam 1. Secure the lever with a grip ring.

G. Line the positioning hole of the F/L idler lever with that of the main plate.(Refer to Fig. 2-15-3.)

Note:

The pin of the F/L idler lever enters the groove of the main cam 2 when the positioning hole of the F/L idler lever is aligned.

Make certain that the pin of the lever enters the groove of the main cam 2.

H. Line the matching mark of main cam 2 with that of main cam 1, and also the positioning hole of main cam 2, and assemble the main cam 2 to the shaft. (Refer to Fig. 2-15-3.)

Note:

Make certain that the pin of the F/L idler lever correctly enters in the groove of the main cam 2.

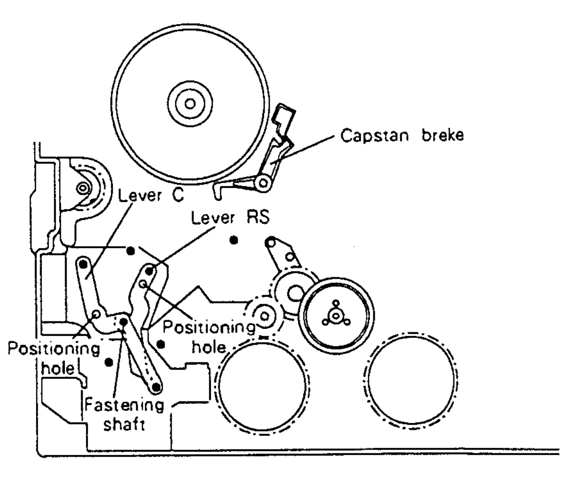

Capstan breke
Lever C
Lever RS
Positioning hole
Positioning hole
Fastening shaft

Fig. 2-15-1 F0D039

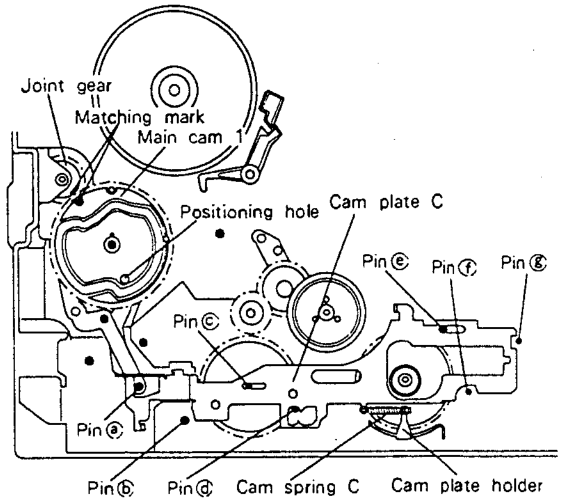

Joint gear
||
Matching mark
Main cam 1
Positioning hole
Cam plate C
Pinⓔ
Pinⓕ
Pinⓖ
Pinⓒ
Pinⓐ
Pinⓑ
Pinⓓ
Cam spring C
Cam plate holder

Fig. 2-15-2 F0D040

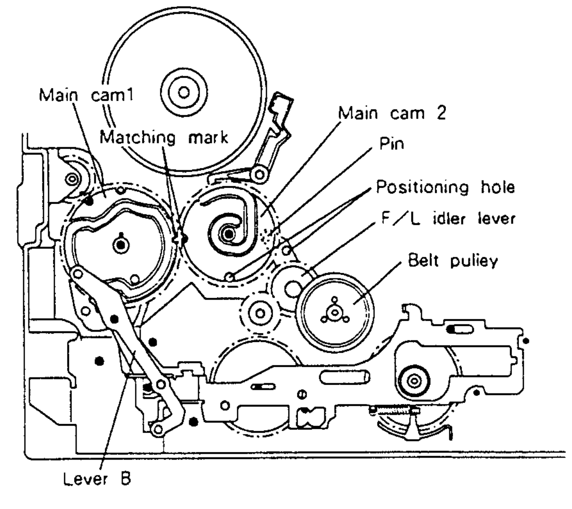

Main cam1
||
Matching mark
Main cam 2
Pin
Positioning hole
F/L idler lever
Belt puliey
Lever B

Fig. 2-15-3 F0D041

I. Make certain that the mode switch is in the eject position. Fasten the PCB-DECK assembly with five screws and solder the FE head terminals.(Refer to Fig. 2-14-2 and 2-14-1.)

Note:

The safety lever is normally held in the leftward position by the spring. Pull the lever forwards and install the PCB-DECK assembly.

J. Install the cam plate B so that the plate matches pins (ⓐ ~ ⓖ) as shown in Fig. 2-15-4, especially pin ⓔ, and secure the plate with three clamps, cut washer (pin ⓑ) and grip ring (pin ⓕ).

K. Line the matching mark of the loading arm T with that of the loading gear arm as shown in Fig. 2-15-4, and assemble the loading gear arm to the shaft so that the pin of the loading gear arm enters the groove of the main cam 2. Secure arm with two grip rings ⓕ. (Refer to Fig. 2-15-5.)

L. Assemble the F/L gear 2, 3, and 4 to the shafts as shown in Fig. 2-15-5.

M. Install the reel belt. (Refer to Fig. 2-5.)

N. Fasten the tension regulation spring T and the spring RS to the tension regulation arm T and the lever RS from the top side of the deck. (Refer to Fig. 2-11-1.)

O. Fasten the capstan brake spring to the capstan brake and the loading gear arm from the top side of the deck. (Refer to Fig. 2-15-6.)

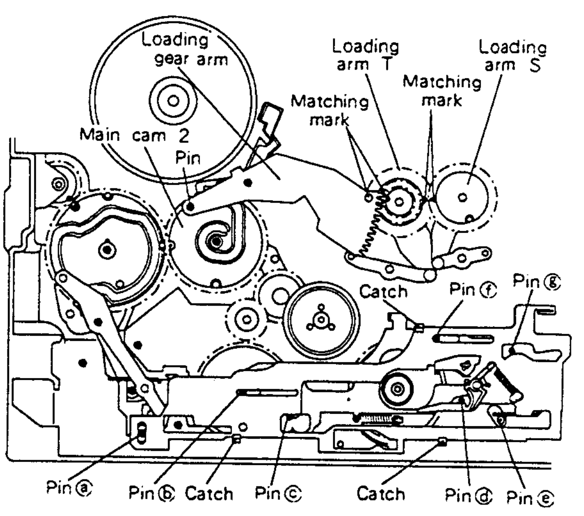

Loading gear arm
Loading arm T
Loading arm S
Matching mark
Matching mark
Main cam 2
Pin
Catch
Pinⓕ
Pinⓖ
Pinⓐ
Pinⓑ
Catch
Pinⓒ
Catch
Pinⓓ
Pinⓔ
F0D042

Fig. 2-15-4

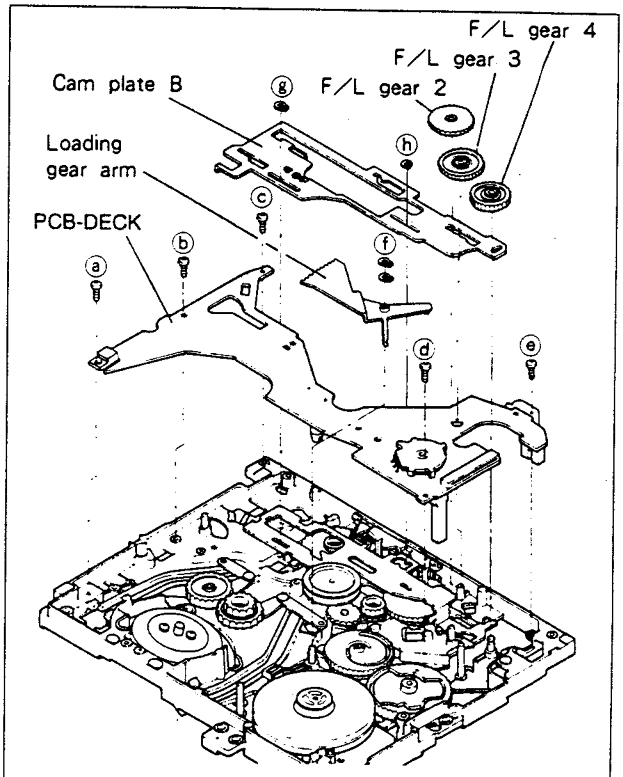

F/L gear 4
F/L gear 3
Cam plate B
ⓖ
F/L gear 2
Loading gear arm
ⓗ
ⓒ
PCB-DECK
ⓑ
ⓕ
ⓐ
ⓓ
ⓔ
F0D037

Fig. 2-15-5

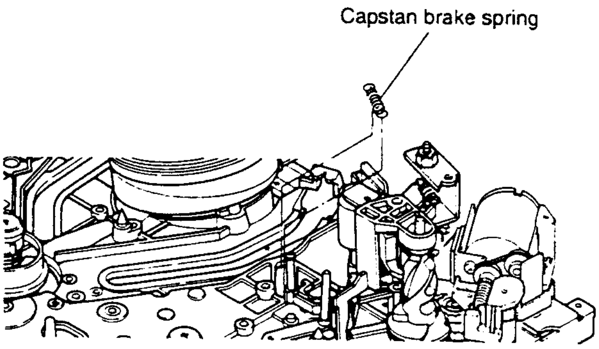

Capstan brake spring

Fig. 2-15-6

2-16 Supply and Takeup Guide Rollers

2-16-1 Removal(Refer to Fig. 2-16.)

A. Remove the cassette housing as in Para. 2-1-1.

B. Loosen the set screw so the guide roller turns freely.

C. Loosen the guide roller height adjusting screw located at the top of the guide roller by turning counterclockwise with the height adjusting screwdriver. Raise and remove the roller from the tape guide.

2-16-2 Installation(Refer to Fig. 2-16.)

A. Make certain that the fastening thread section of a new guide roller is provided with a rubber ring.

B. Set the new guide roller in the tape guide fastening hole.

C. Turn the guide roller slowly clockwise till it becomes heavy.

D. Turn further about 1/6 turn from the point where the guide roller becomes heavy, and return the roller about one turn counter-clockwise.

E. Again turn the guide roller slowly clockwise till it becomes heavy. Turn the roller further about 1/6 turn from the point where the roller becomes heavy.

F. Secure the guide roller lightly with the set screw. Check and adjust the envelope as in Para. 3-2.

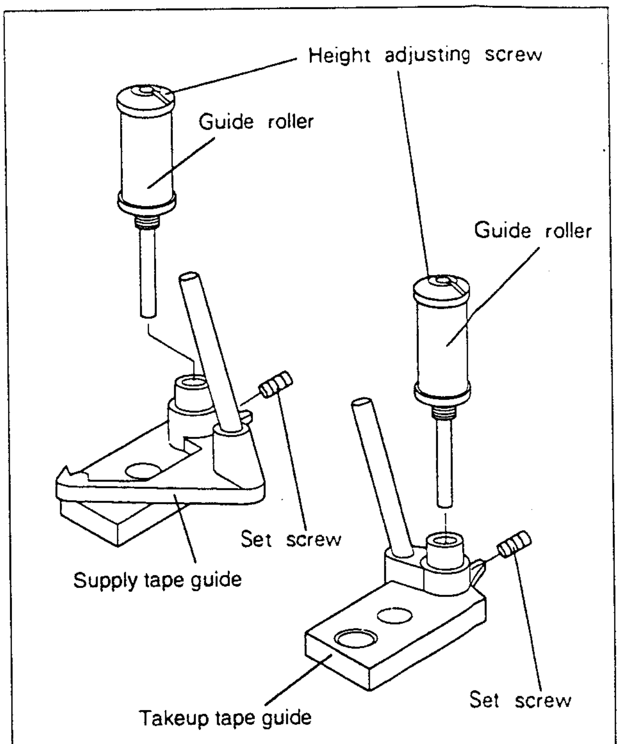

Height adjusting screw
Guide roller
Guide roller
Set screw
Supply tape guide
Takeup tape guide
Set screw
F0D043

Fig. 2-16

2-17 Supply and Takeup Tape Guide Assemblies

Note:
Refer to section 3-2-7 and 3-3-3 before replacing the supply or takeup tape guide assemblies.

2-17-1 Removal(Refer to Fig. 2-17-1~2-17-4.)

A. Remove the cassette housing as in Para. 2-1-1.

B. Detach the capstan brake spring from the capstan brake and the loading gear arm.(Refer to Fig. 2-15-6.)

C. Remove the reel belt. (Refer to Fig. 2-5.)

D. Secure the tension arm and the tension regulation arm S with a rubber band etc. so as to separate them from the supply guide roller.(Refer to Fig. 2-17-1.)

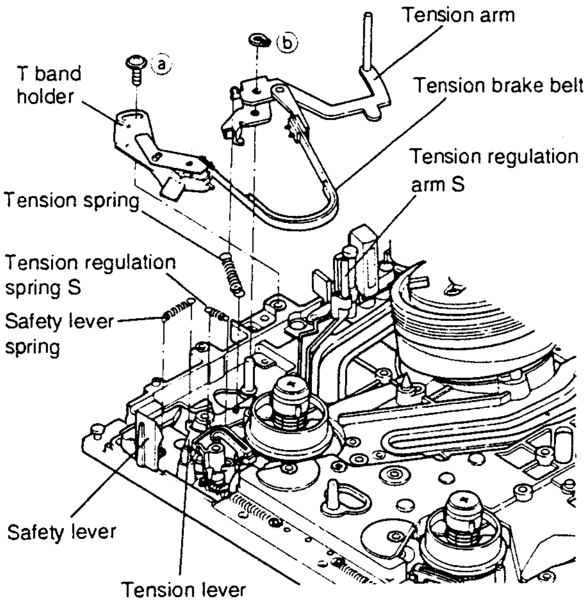

Tension arm
ⓑ
ⓐ
T band holder
Tension brake belt
Tension regulation arm S
Tension spring
Tension regulation spring S
Safety lever spring
Safety lever
Tension lever

Fig. 2-17-1

E. Remove the grip ring and remove the loading gear arm.(Refer to Fig. 2-17-2.)

F. Turn the loading arm S and T to the loading position.(Refer to Fig. 2-17-2.)

G. Unfasten the clamp shown in Fig. 2-17-3, and remove loading arm S.

H. Remove the loading arm T is being replaced the takeup guide assembly.

I. Unfasten the clamp of the slider which secures the supply or takeup tape guide assembly, and remove the tape guide assembly and the slider from the main plate.(Refer to Fig. 2-17-4.)

2-17-2 Installation(Refer to Fig. 2-17-1~2-17-4.)

A. Place a new tape guide assembly on the installation rail of the main plate and install the slider on the reverse side of the main plate so that the catch of the slider enters the fastening hole of the tape guide assembly.

B. If the takeup tape guide is replaced, install the loading arm T first.(Refer to Fig. 2-17-2.)

C. Install the loading arm T so that the matching mark of the loading arm S is lined with the matching mark of the loading arm T as illustrated in Fig. 2-17-2.

D. Line the matching mark of the loading gear arm with that of the loading arm T, and assemble the loading gear arm to the shaft so that the pin of the loading gear arm enters the groove of the main cam 2. Secure the loading gear arm with two grip rings.

E. Install the reel belt.(Refer to Fig. 2-5.)

F. Fasten the capstan brake spring to the capstan brake and the loading gear arm from the top side of the deck.(Refer to Fig. 2-17-1.)

G. Install the cassette housing as in Para. 2-1-2.

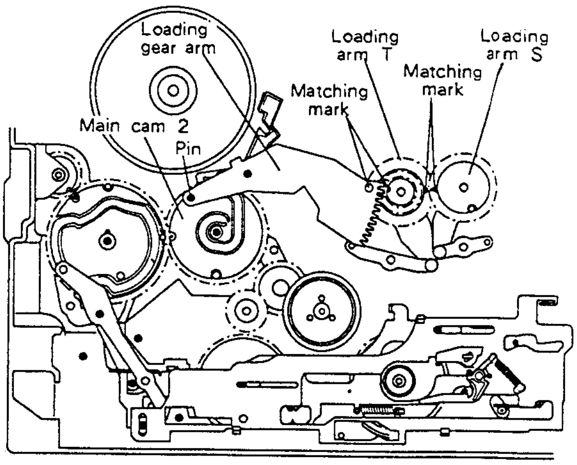

Loading gear arm
Loading arm T
Loading arm S
Matching mark
Matching mark
Main cam 2
Pin

Fig. 2-17-2 F0D044

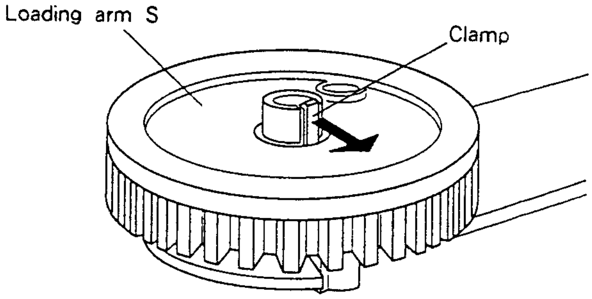

Loading arm S
Clamp

Fig. 2-17-3 F0D045

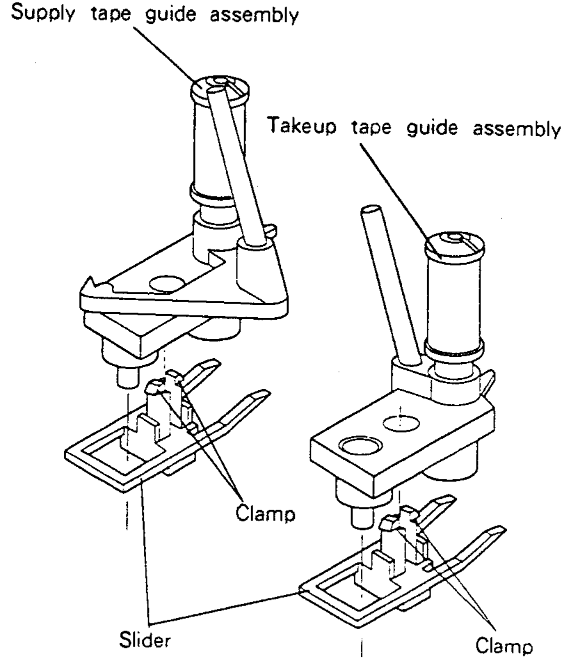

Supply tape guide assembly
Takeup tape guide assembly
Clamp
Slider
Clamp

Fig. 2-17-4 F0D046

3. Interchangeability Adjustment of Mechanism

Note:

Tracking may need to be preset in the inter-changeability adjustment of the mechanism.
Digital tracking should be preset. To preset, short circuit TP5A and TP5B on the PCB-MAIN.

Note:

The adjustment is conducted in the playback mode, using the stair step signal of the alignment tape, connect an oscilloscope to TP2A and external Trig. to TP2H, unless other-wise specified.

3-1 Adjustment of Back Tension and Tension Pole Position(Refer to Fig. 3-1.)

Run a blank tape for several minutes to break in the reel disks and the transport before beginning the adjustment.

A. Set the back tension measuring jig and set the VCR to the playback mode.

B. When the running of the tape becomes steady, make certain that the tension arm check hole is within the M/P hole of the main plate(0±0.5mm)or the interval between the centre of tension pole and the centre of Supply guide pole is 2.0±0.5mm.

C. If neither the centre of Tension pole nor the tension arm check hole is in position, loosen the T band holder fastening screw lightly and move the T band holder so that the condition specified by the para.B is satisfied.

D. On completion of adjustment, tighten the T band fastening screw.

E. Make certain that the reading of the back tension measuring jig is 50±6g-cm.

F. When the running of the tape is steady, check visually to make certain that the deflection of the Tension pole is 1mm or less.

Note:

Slight fluctuation of back tension may be tolerated, however if fluctuation exceeds 5g-cm, the reel disk etc. may be defective. Examine and correct the defect.

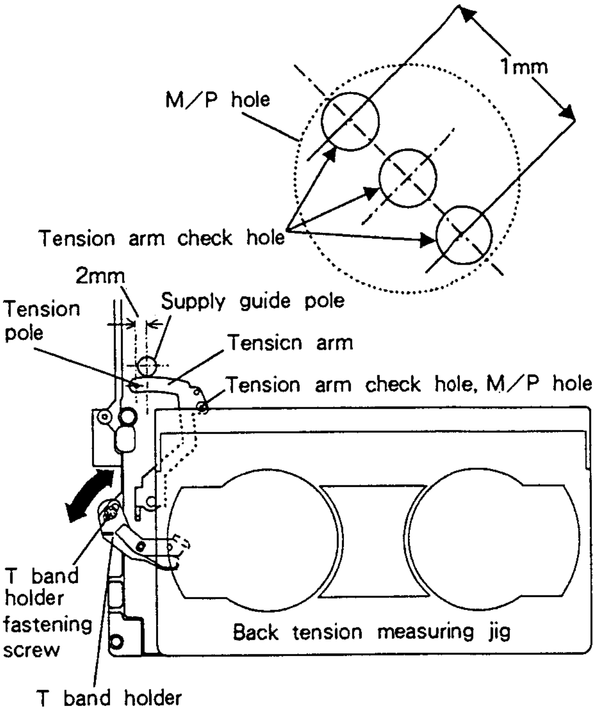

1mm
M/P hole
Tension arm check hole
2mm
Tension pole
Supply guide pole
Tensicn arm
Tension arm check hole, M/P hole
T band holder fastening screw
Back tension measuring jig
T band holder
F0D047

Fig. 3-1

3-2 Check and Adjustment of FM Envelope

3-2-1 Guide Roller Adjustment(Refer to Fig. 3-2-1.)

A. Set the VCR to the playback mode.
B. Preset tracking.
C. Check if the FM waveform is flat like A shown in Fig. 3-2-1.
D. Adjust the height of the supply guide roller as in 3-2-2 if the leading portion (the entry side of the drum)of the FM waveform is not flat like B or C.
Adjust the height of the takeup guide roller as in 3-2-3 if the trailing portion (the exit side of the drum)is not flat like D or E.

3-2-2 Adjustment of Supply Guide Roller Height (Refer to Fig. 3-2-1, 3-2-2.)

A. Loosen the set screw to such a degree so the supply guide roller turns lightly.(Refer to Fig. 3-2-2.)
B. The supply guide roller is low if the leading portion(the entry side of the drum) of the FM waveform is like B, and high if like C. Adjust the height of the roller by turning the adjusting screw at the top of the roller so that the FM waveform shall be flat like A.
- Turn the adjusting screw counterclockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.

C. Carry out the coarse adjustment of phase as in 3-2-4.

3-2-3 Adjustment of Takeup Guide RollerHeight (Refer to Fig. 3-2-1, 3-2-2.)

A. Loosen the set screw to such a degree as the takeup guide roller turns lightly.(Refer to Fig. 3-2-2.)
B. The takeup guide roller is low if the trailing portion(the exit side of the drum) of the FM waveform is like D, and high if like E. Adjust the height of the roller by turning the adjusting screw at the top of the roller so that the FM waveform shall be flat like A.
- Turn the adjusting screw counterclockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.

C. On completion of height adjustment, adjust the azimuth and height of the A/C head as in 3-3-2.
D. Coarsely adjust the phase as in 3-2-4.

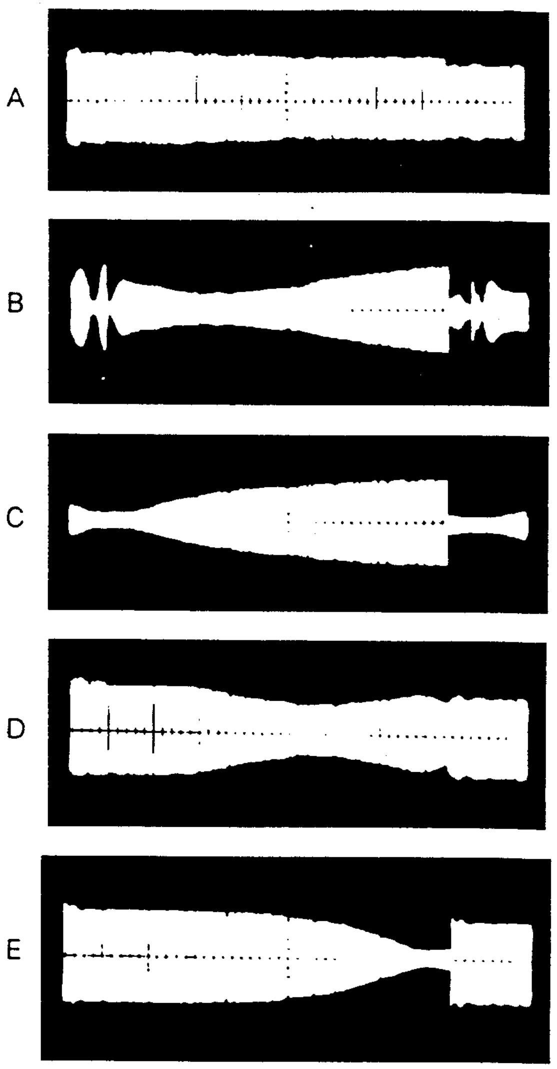


Fig. 3-2-1 F0D048~052

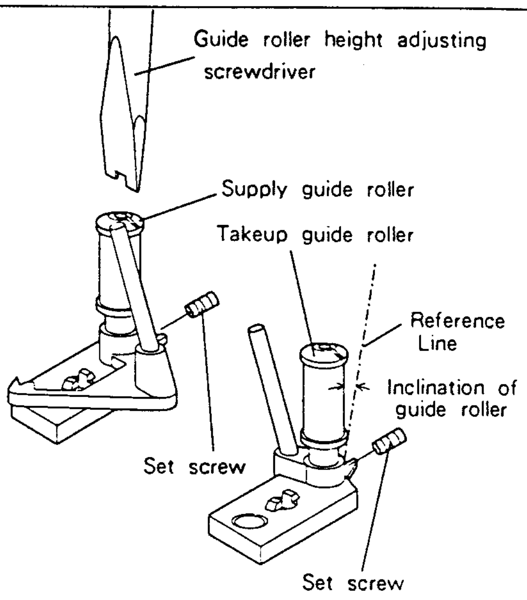


Fig. 3-2-2 F0D053

3-2-4 Coarse Phase Adjustment (Refer to Fig. 3-2-3, 3-2-4.)

A. Set the VCR to the playback mode.
B. Preset tracking.
C. Check the FM waveform after checking and adjusting the guide rollers.
D. If the amplitude of the FM waveform is narrow like F because of out of phase, adjust the phase adjusting nut so that the amplitude of the FM waveform is maximum.

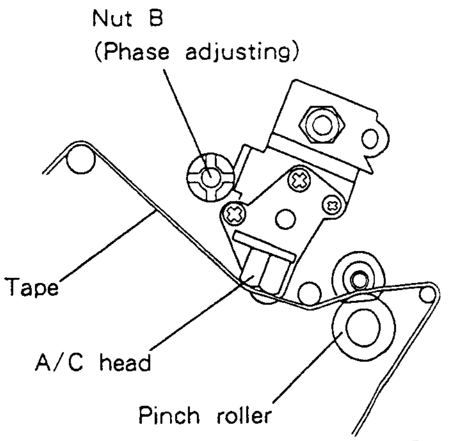
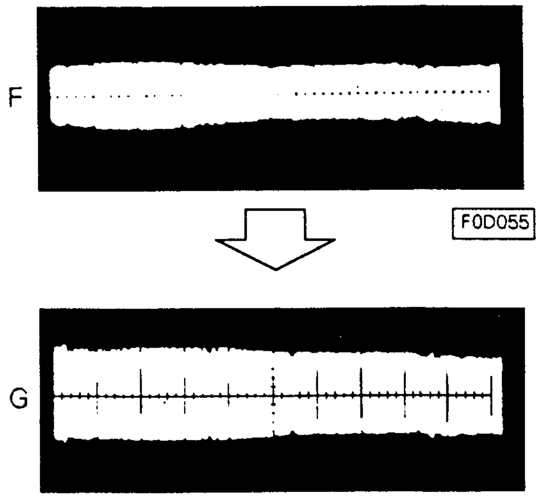


Fig. 3-2-3 F0D054

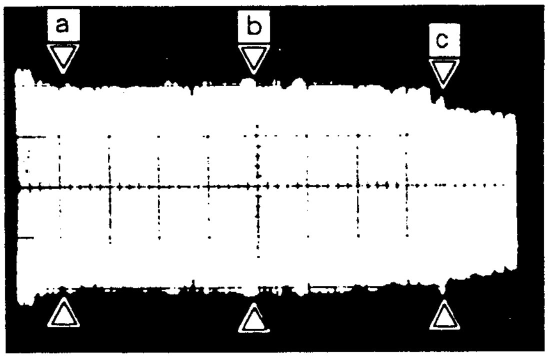


F0D055

Fig. 3-2-4 F0D056

3-2-5 Check of FM Waveform Flatness (Refer to Fig. 3-2-5.)

A. Set the VCR to the playback mode.
B. Set the tracking switch to the manual mode. Vary tracking and check if the amplitude changes and the waveform remains flat.
C. Adjust tracking in the manual mode so that the amplitude is maximum, and adjust the oscilloscope so that the amplitude is '5' on the scale of the oscilloscope.
D. Adjust tracking so that the amplitude at the middle(around the point 'b')of the FM wave form is about 80%('4' on the scale of the scope)of the maximum amplitude. Make certain that the amplitudes at points 'a' and 'c' satisfy the requirements given in Fig. 3-2-5.
E. If deviating from the requirements, conduct the check and adjustment of the FM envelope beginning with 3-2.



a	c
At least 2.8 of the scale	At least 2.8 of the scale

Fig. 3-2-5 F0D057

3-2-6 Check 1:Tape Running Condition on Guide Rollers(Refer to Fig. 3-2-6.)

A. Set the VCR to the playback mode.

B. Visually check if there is a space between the tape and the lower flange of the supply and the take up guide rollers.

C. If not, replace the tape guide as in 3-2-7.

Note:

In this case the tape guide should be replaced with the tape guide which has a larger inclination.

D. If the supply tape guide is replaced, check the guide roller as in 3-2-1.

If the take up tape guide is replaced, check the guide roller as in 3-2-3, and the waveform flatness as in 3-2-5

E. Load and unload the tape several times to make certain that the flatness of the FM waveform does not change.

F. If changes occur, check the A/C arm shaft for looseness. If not free, replace the A/C arm and adjust the audio/ control head as in 3-3.

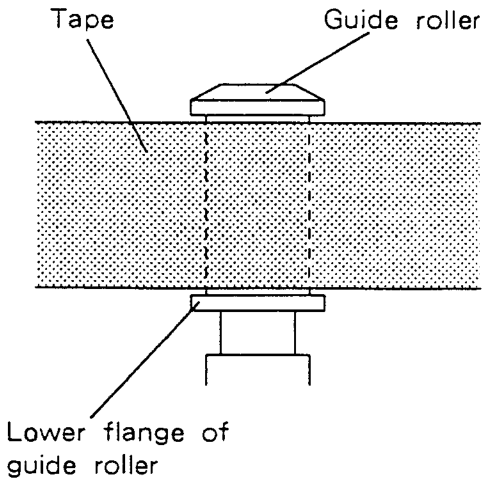


Fig. 3-2-6 F0D058

3-2-7 Replacement of Tape Guides

A. Identify the Item Number of the tape guide to be replaced. This is done by observing the marking present on the die-cast portion of the tape guide base, and comparing that marking to Fig. 3-2-7.

B. If the Item Number of the tape guide presently installed is a '2', replace the guide with an Item Number '1' guide.(Part No.635B059010)

C. If the Item Number of the present tape guide is a '1', replace the guide with an Item Number '3' guide.

D. If the Item Number of the present tape guide is a '3', replace the guide with other Item Number '3' guide.

E. Once the tape guide is replaced, resume alignment starting with 3-2-1.

3-2-8 Check 2: Tape Running Condition on Guide Rollers

A. Set the VCR to the playback mode.

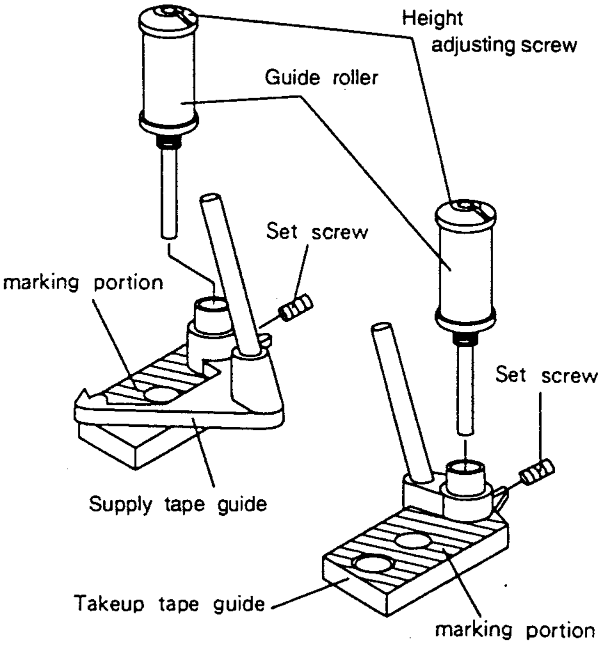
B. Press the head of the supply guide roller and the take up guide roller lightly, and release the roller. Check if the FM waveform is quickly restored to the previous level.

C. If the FM waveform is not restored quickly, replace the tape guide as in 3-2-7.

D. If the supply tape guide is replaced, check the guide roller as in 3-2-1.

If the takeup tape guide is replaced, check the guide roller as in 3-2-1, and check the FM waveform as flatness as in 3-2-5

E. If satisfactory, tighten the set screw of the guide roller on the supply side and the take up side.



Identification of Tape Guide Item Number
(Example ; Parts No. 635B059010)
Item No.

Item No.1	No marking
Item No.2	Marked with black magic marker
Item No.3	Marked with red magic marker

※ The marking point is marked in the oblique line portion shown in figure above.

Fig. 3-2-7

3-3 Adjustment of Audio/Control Head

3-3-1 Adjustment of A/C Head Slant (Refer to Fig. 3-3-1.)

A. Play back a blank tape.

B. Turn the screw C slowly clockwise to crease the bottom edge of the tape slightly by the lower flange of the takeup guide pole.

C. Turn the screw C slowly counterclockwise to eliminate the crease of the bottom edge of the tape.

D. Turn the screw C slowly clockwise again and stop turning just before the tape is creased.

3-3-2 Adjustment of A/C Head Azimuth and Height(Refer to Fig. 3-3-1~3-3-3.)

A. Using stair step signal of alignment tape,connect an oscilloscope to the audio output terminal and set the VCR to the playback mode.

B. Turn the nut A(height adjusting)and the screw B(azimuth adjusting)so that the audio output level is maximum.

C. Turn the A/C head counterclockwise and release it to make certain that the audio output level does not change.

D. If the level changes, check if the A/C arm shaft is loose. If not free, replace the A/C arm and adjust the slant of the A/C head as in 3-3-1 and the azimuth and height of the A/C head from beginning.

E. Apply a force lightly to the A/C head shaft in the direction of A and A' of the arrow shown in Fig. 3-3-3, to make certain that the audio output level remains at maximum level and does not change.

F. If the level changes, turn the nut A(height adjusting)so that the audio output level is maximum. Apply a force lightly to the A/C head shaft in the direction of B and B' of the arrow shown in Fig. 3-3-3 and adjust so that the sound output level is maximum.

G. Check the sound output level in the playback mode to make sure that the fluctuation of the level is less than 2dBp-p.

H. If the fluctuation exceeds 2dBp-p, adjust the slant of the A/C head and the azimuth and height of the head.

I. If this is still not satisfactory, replace the takeup tape guide as outlined in 3-3-3.

Note:
In this case the tape guide should be replaced with a guide which has less inclination.

J. On completion of the above adjustment,adjust phase as in 3-4.

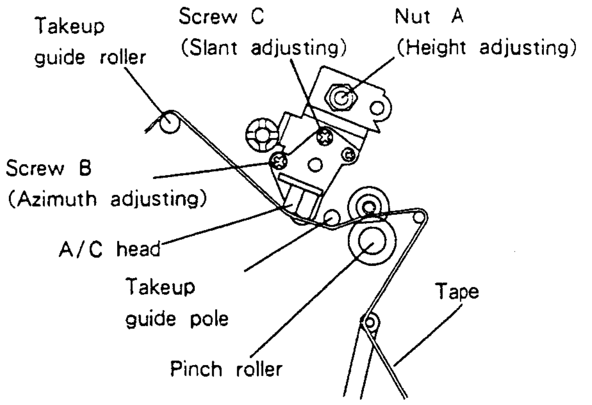


Fig. 3-3-1 F0D059

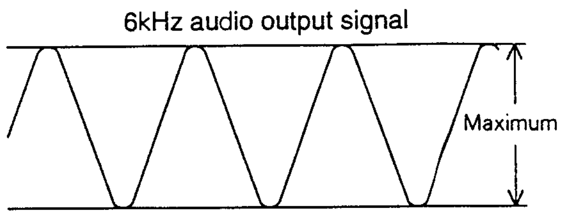


Fig. 3-3-2 F0D060

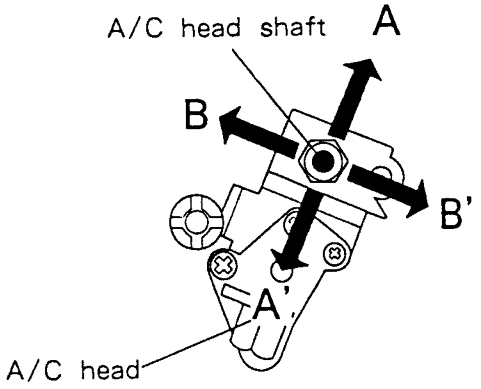


Fig. 3-3-3 F0D061

Identification of Tape Guide Item Number
(Example ; Parts No. 635B060010)
Item No.

Item No.1	No marking
Item No.2	Marked with black magic marker
Item No.3	Marked with red magic marker

※The marking points are marked in the tops of the Takeup and Supply tape guides.(Refer to Fig. 3－2－7)

Fig.3-3-4

3-3-3 Replacement of Tape Guides

A. Identify the Item Number of the Tape Guide to be replaced. This is done by observing the marking present on the die-cast portion of the Tape Guide base, and comparing that marking to Fig. 3-3-4.

B. If the Item Number of the tape guide presently installed is a '3', replace the guide with an Item Number '1' guide.

C. If the Item Number of the present tape guide is a '1', replace the guide with an Item Number '2' guide.

D. If the Item Number of the present tape guide is a '2', replace the guide with other Item Number '2' guide.

E. Once the tape guide is replaced, resume alignment starting with 3-2-1.

3-4 Phase Adjustment(Refer to Fig. 3-4.)

A. Set the VCR to the playback mode.

B. Preset tracking.

C. Turn the phase adjusting nuts to make the amplitude of the FM waveform maximum.

Note:

Do not turn the phase adjusting nut more than one turn in either direction.

D. Turn the A/C head counterclockwise and return to make sure that the amplitude of the FM waveform is the same as that before turning the head.

E. If the amplitude changes, check the A/C arm shaft if loose. If not free, replace the A/C arm and adjust the A/C head as in 3-3 and the phase as in this section from beginning.

F. Load and unload the tape several times to make certain that the amplitude of the FM waveform does not change.

3-5 Adjustment of Takeup Guide Arm Height (Refer to Fig. 3-5.)

A. Run a final portion of E-240 blank tape in the reverse search mode.

B. Adjust the height of the takeup guide pole by turning the height adjusting nut so that the tape shall not be creased at the upper and the lower flange portion of the take up guide pole.

Note:

Set the adjusting nut in the screwing-in direction.

Do not turn the nut more than one turn in either direction.

C. Eject the cassette tape and set to the reverse search mode again to make certain that the tape is not creased at the upper and the lower flange portion of the takeup guide pole.

D. Set to the playback mode and be sure that the tape is not creased at the upper and the lower flange portion of the takeup guide pole.

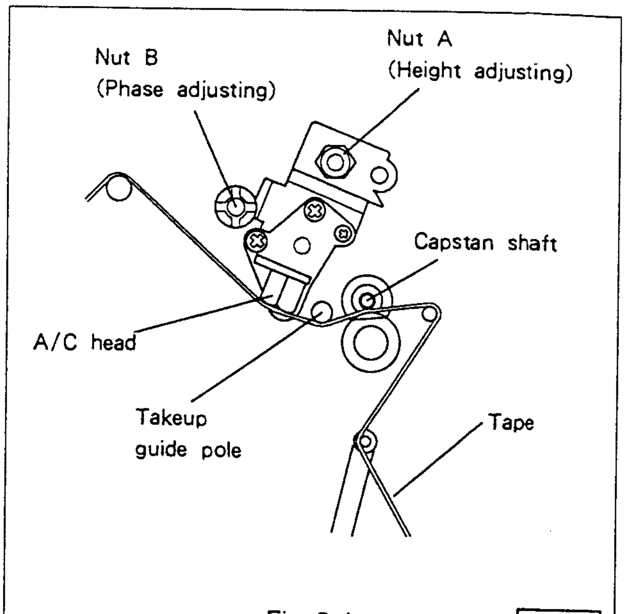


Fig. 3-4

F0D062

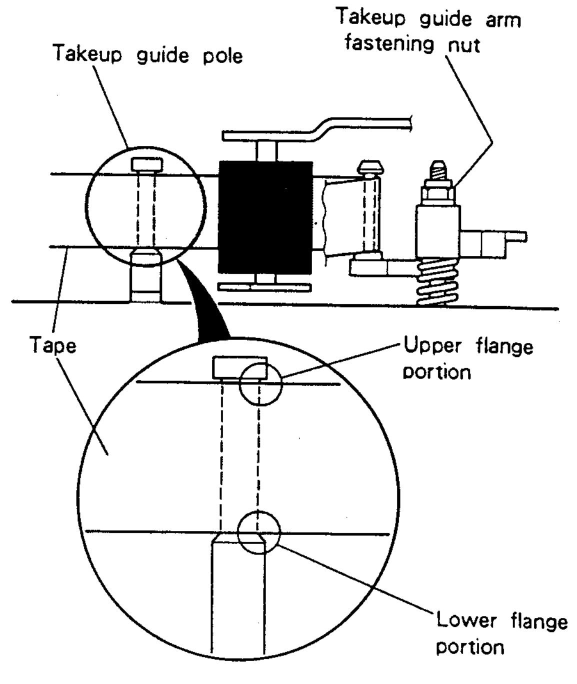


Fig. 3-5

F0D063

KEY TO ABBREVIATIONS

A/C : Audio/Control
ACC : Automatic Colour Control
A.E : Audio Erase
AFC : Automatic Frequency Control
AFT-D : Automatic Fine Tuning Door Switch
AGC : Automatic Gain Control
AL : After Loading
AMP : Amplifier
ANT : Antenna
A-PB : Audio-Playback
A-REC : Audio-Recording
ALC : Automatic Level Control

BPF : Band-Pass Filter
B/W : Black and White
BS : Band Switch

CASS : Cassette
CP : Capstan
CP-FG : Capstan-Frequency Generator
CP-F/R : Capstan-Forward/Reverse
CP-M : Capstan-Motor
CONV : Converter
CTL : Control
C-LAMP : Cassette Lamp
C-I LAMP : Cassette Indicator Lamp

DAL : Delay-After Loading
DEMOD : Demodulator
DET : Detector
DL : Delay Line
DL-REV : Delay Reverse
DL-FWD : Delay Forward
DOC : Drop Out Compensator

EF : Emitter Follower
EMPHA : Emphasis
EO : Equalizer
EE : Electronic-Electronic
ES : End Sensor

FE-H : Full Erase Head
FF : Flip Flop or Fast Forward
FG : Frequency generator
FL-SW : Front Loading Switch
FLM : Front Loading Motor
F/R-SW : FF/Rewind Switch

G : Ground

HE-1 : Hall Element-1
HE-2 : Hall Element-2
H-LED : Humidity-LED
H-SENS : Humidity-Sensor
HPF : High-Pass Filter

LIM : Limiter
LPF : Low-Pass Filter
LM : Loading Motor

MDA : Motor Drive Amplifier
MC : Mechanical Control
MIC : Microphone
MOD : Modulator

OPE : Operation
OSC : Oscillator

PB : Play Back
PG : Pulse Generator
P/R-SW : P.B/REC-Switch
PCB : Printed Circuit Board
PIC : Picture Control

REC : Recording
REF : Reference
RIS : Record Inhibit Switch
REW : Rewind
REG : Regulator
RS : Reverse Search

SENS : Sensor
SM : Supply Motor
S/P : Still/Pause
SS : Speed Search
STBY : Stand By
S & H : Sample & Hold
SYNC SEP : Sync Separator

TM : Take up Motor
T-REC : Timer-Recording
T.P : Test Point
TR : Transistor
TU-P : Tuner-Power

UL : Unloading

VS : Voltage Synthesizer
V.SYNC : Vertical Sync
VCO : Voltage Controlled Oscillator
VXD : Variable Crystal Oscillator

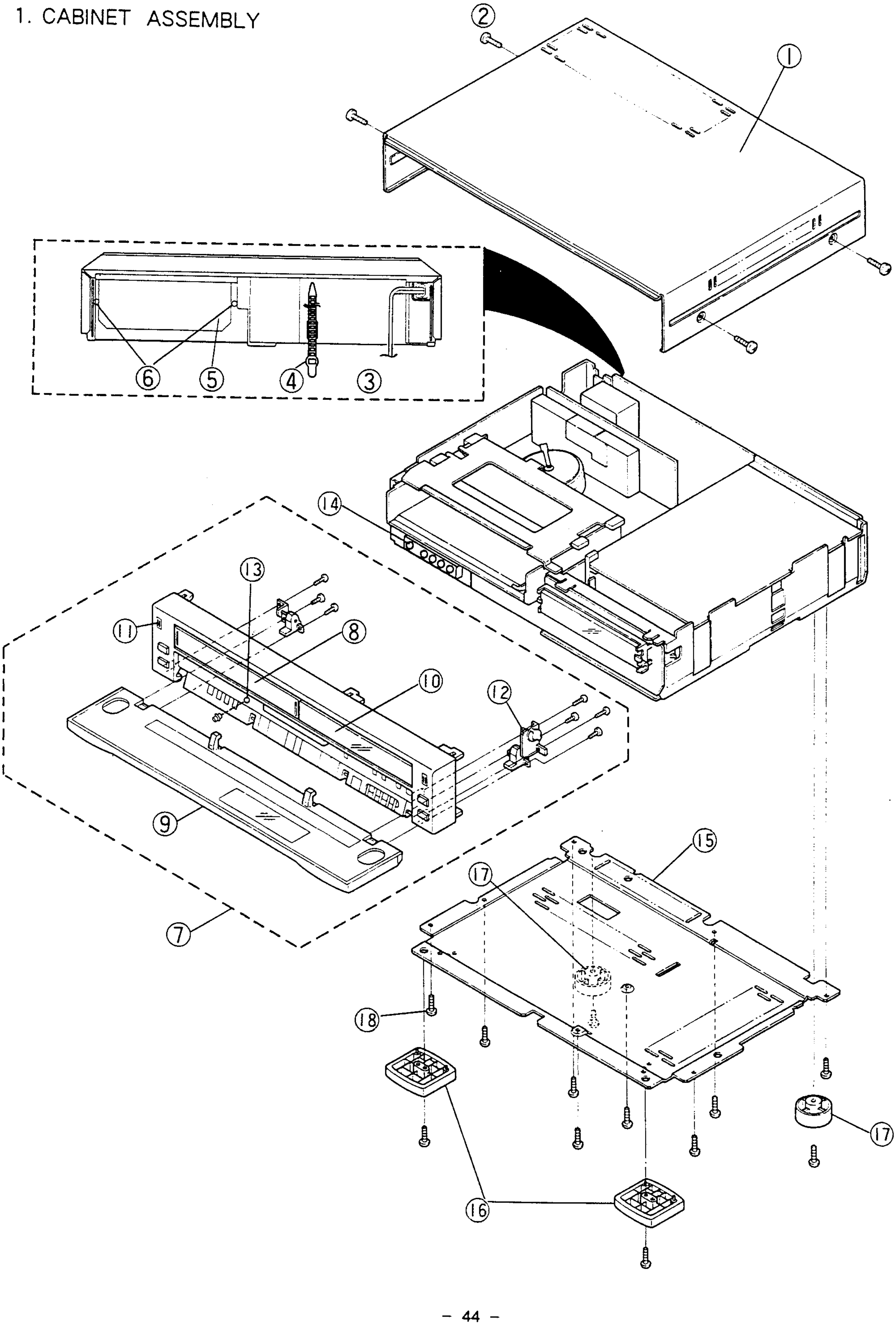
W/D : White/Dark

X'OSC : Crystal Oscillator

Y/C : Luminance/Chrominance

PARTS LIST

1. CABINET ASSEMBLY



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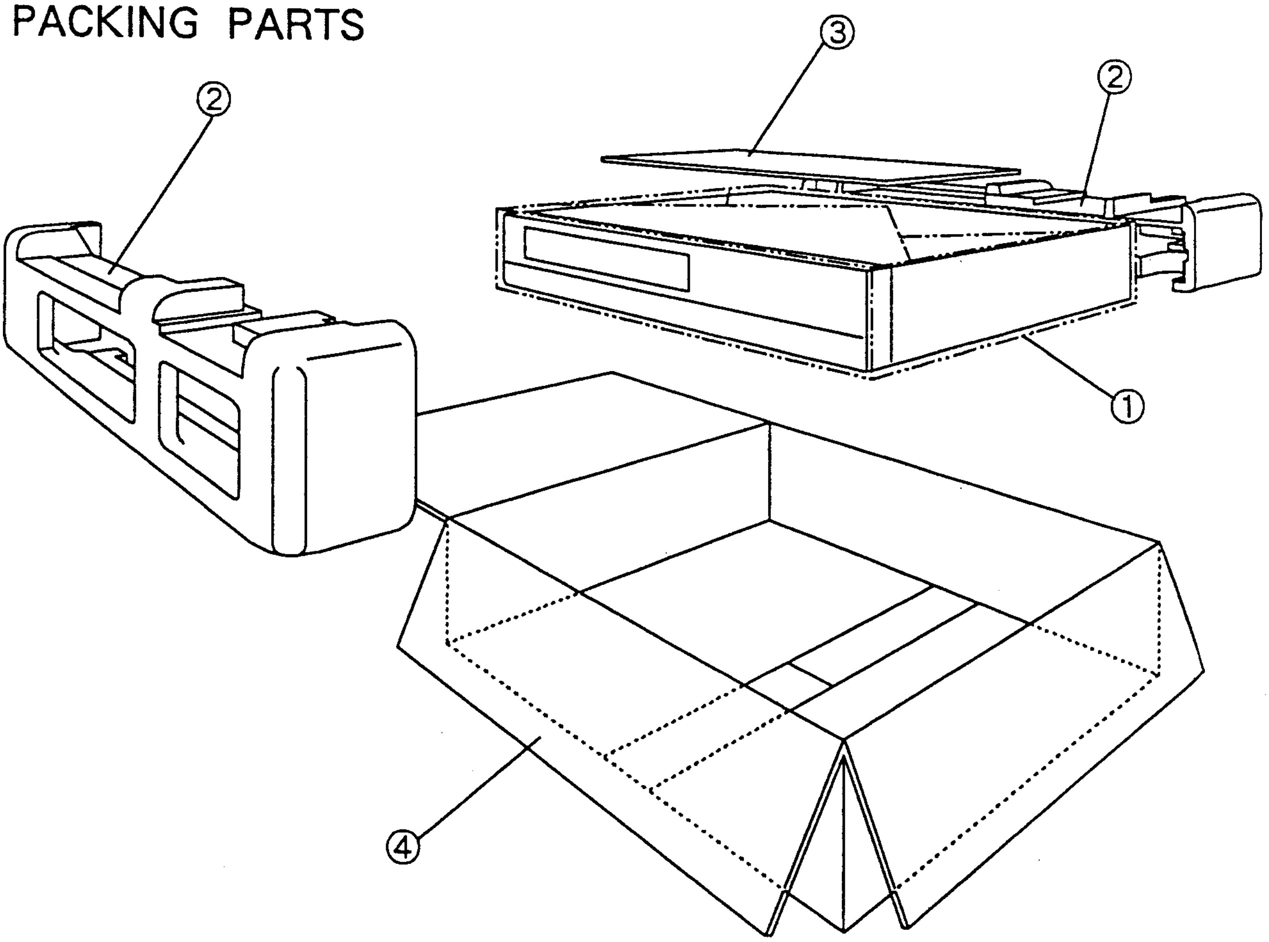
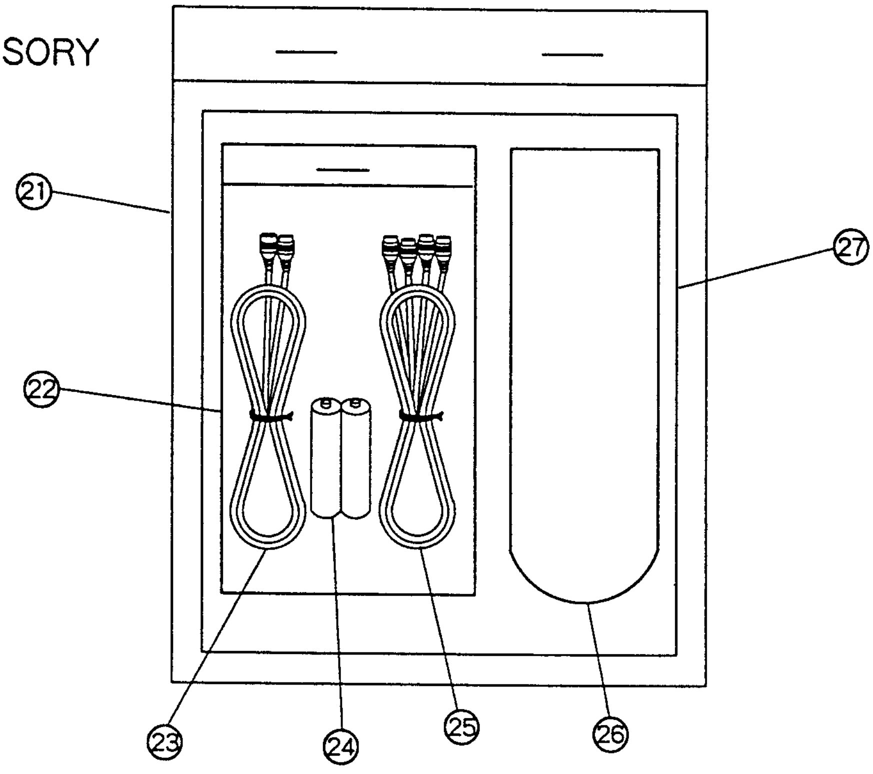
ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
CABINET ASSEMBLY			
1	96BC020090	TOP COVER ASSY	
2	669D2230B0	SCREW	3X10
3	246C101020	AC POWER CORD	[B, IR]
3	246C101010	AC POWER CORD	[E, Y]
4	621C027010	CORD BAND	
5	761B234020	ANTENNA COVER	
6	669D359040	SCREW	3X12
7	701B2B6020	FRONT UNIT	[B]
7	701B263040	FRONT UNIT	[E, IR]
7	701B263030	FRONT UNIT	[Y]
8	702B855090	CASSETTE DOOR	
9	752C02B020	DOOR PANEL ASSY	[B]
9	752C011040	DOOR PANEL ASSY	[E, IR]
9	752C011030	DOOR PANEL ASSY	[Y]
10	702BB54010	TIMER PANEL	
11	461C012020	DOOR MAGNET	
12	520C034020	DAMPER UNIT	
13	734D4B2020	TRACKING KNOB	
14	440B126010	FRONT TERMINAL BOARD	ABS
15	590A2B7010	BOTTOM PANEL	
16	771C135010	INSULATOR-F	
17	771C131030	INSULATOR-R	
18	669D220030	SCREW	3X10 46LA005

2. PACKING PARTS



ACCESSORY



ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
PACKING PARTS			
1	831D190030	PACKING SHEET	800X800
2	803A319010	PACKING CUSHION	
3	----------	ACCESSORY	
4	802B394060	PACKING CASE	[B]
4	802B412020	PACKING CASE	[E]
4	802B412010	PACKING CASE	[IR]
4	802B394050	PACKING CASE	[Y]
	831D198020	PACKING BAG	FOR AC POWER CORD
ACCESSORY			
21	831D181020	PACKING BAG	375X250X0.06
22	831D110080	PACKING BAG	150X280
23	242D231030	CABLE	1.5m
24	----------	BATTERY	
25	242C938010	PHONO CABLE	2P R&W 1.5m
26	939P480020	REMOTE HAND UNIT	
27	872C059030	INSTRUCTION BOOK	[B, IR]
27	872C093080	INSTRUCTION BOOK	[E]
27	872C059020	INSTRUCTION BOOK	[Y]

3. ELECTRICAL PARTS

INTEGRATED CIRCUITS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
IC101	272P863010	IC	TDA9800
IC102	268P192010	IC	LA791Q [E, IR, Y]
IC201	272P221020	IC	XRA7254S
IC2A0	272P701020	IC	LA7393A
IC2A1	272P702010	IC	LC8992
IC2A3	272P265010	IC	BA7021
IC2A4	272P325020	IC	NJM2235S
IC3A0	272P84501Q	IC	AN3316K
IC3000	272P844020	IC	AN3976NF
IC3001	268P419010	IC	M5223P
IC3301	263P053020	IC	TC4053BP
IC3302	272P375040	IC	XRA15218
IC3303	272P375030	IC	XRA15218N
IC3310	272P200020	IC	M5201L
IC4A0	274P155020	IC	BU2835AS
IC4A1	272P079010	IC	NJM2902M
IC4A2	272P235010	IC	TA7291S
IC501	274P163010	IC	M35010-051SP
IC5A0	274P199010	IC	M37424M8-323SP
IC5A2	272P079010	IC	NJM2902M
IC5A3	263P611010	IC	MC14011BF
IC5A4	263PD94040	IC	MC14094BF
IC651	272P494010	IC	M52063SP
IC750	272P551010	IC	IC IR3P72 [Y]
IC7AQ	272P666010	IC	TB1210F [B, E, IR]
IC7A1	268P419010	IC	M5223P [B, E, IR]
IC7A2	272P2B4010	IC	TD6710AN [B, E, IR]
IC7A3	272P667010	IC	AFS816F14000A1 [B, E, IR]
IC7A4	266P982010	IC	AN608P [B, E, IR]
IC7A5	266P982010	IC	AN6Q8P [B, E, IR]
IC7A6	266P982010	IC	AN6Q8P [B, E, IR]
IC7Y1	272P026010	IC	M51366SP [B, E, IR]
ICBA0	274P201010	IC	μPD752176F-613-3BE
IC8A1	263P593010	IC	CAT35C104P
IC8A2	266P010020	IC	μPC574J-K
IC9AQ	272P237010	IC	LA6324N

TRANSISTDRS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 02	26QP802020	CHIP TRANSISTOR	2SA 1235-F [E]
Q 1Q1	26QP805030	CHIP TRANSISTOR	2SC3053-D
Q 1Q2	260P802020	CHIP TRANSISTOR	2SA 1235-F
0 1Q3	260P805030	CHIP TRANSISTOR	2SC3053-D [Y]
Q 116	260P807010	CHIP TRANSISTOR	DTC124K
Q 1N1	260P321010	TRANSISTOR	2SC1687 [6, E, IR]
Q 206	260P806010	CHIP TRANSISTOR	DTA124EK
Q 207	260P804020	CHIP TRANSISTOR	2SC3052-F
0 208	260P817Q30	CHIP TRANSISTOR	2SA1037K
Q 21Q	260P807010	CHIP TRANSISTOR	DTC124K
Q 27Q	260P807010	CHIP TRANSISTOR	DTC124K
Q 271	260P807010	CHIP TRANSISTOR	DTC124K
Q 290	260P807Q10	CHIP TRANSISTOR	DTC124K
Q 291	26QP80701Q	CHIP TRANSISTOR	DTC124K
0 292	260P807010	CHIP TRANSISTOR	DTC124K
Q 2B1	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2B2	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 2B5	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 2B6	260P805030	CHIP TRANSISTOR	2SC3053-D
0 2B8	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2B9	260P805030	CHIP TRANSISTOR	2SC3053-D
0 2C3	260P806010	CHIP TRANSISTOR	DTA124EK
0 2C4	280P806010	CHIP TRANSISTOR	DTA124EK
Q 2C5	260P807010	CHIP TRANSISTOR	DTC124K
Q 2C7	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2C8	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2C9	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2D0	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2D1	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2D4	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 2D5	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2D6	260P255040	TRANSISTOR	2SA950-Y
Q 2E1	260P582040	TRANSISTOR	2SA952-K
Q 2E3	260P802020	CHIP TRANSISTOR	2SA 1235-F
0 2E5	260P807010	CHIP TRANSISTOR	DTC124K
0 2E6	260P807010	CHIP TRANSISTOR	DTC124K
0 2E7	260P582040	TRANSISTOR	2SA952-K
0 2E8	260P632010	TRANSISTOR	DTC124ES
0 2P0	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 2P1	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2P2	260P805030	CHIP TRANSISTOR	2SC3053-D
Q 2P3	260P806010	CHIP TRANSISTOR	DTA124EK
0 2P4	260P805030	CHIP TRANSISTOR	2SC3053-D
0 2P5	260P807010	CHIP TRANSISTOR	DTC124K
Q 2P6	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2P7	260P807010	CHIP TRANSISTOR	DTC124K
0 2R0	260P807010	CHIP TRANSISTDR	DTC124K
0 2R1	260P807010	CHIP TRANSISTDR	DTC124K
0 2S1	260P806010	CHIP TRANSISTOR	DTA124EK
0 2S3	260P807010	CHIP TRANSISTDR	DTC124K
0 2X0	260P607010	CHIP TRANSISTOR	DTC124K
0 2X1	260P806010	CHIP TRANSISTOR	DTA124EK
Q 2X2	260P807010	CHIP TRANSISTOR	DTC124K
Q 2X4	260P807010	CHIP TRANSISTOR	DTC124K
Q 2X5	260P807010	CHIP TRANSISTOR	DTC124K
Q 2001	260P654020	TRANSISTOR	2SC2058S-P
0 2002	260P654020	TRANSISTOR	2SC2058S-P
Q 2003	260P632010	TRANSISTOR	DTC124ES
0 2004	260P654020	TRANSISTOR	2SC2058S-P
Q 2005	260P632010	TRANSISTOR	DTC124ES
Q 2006	260P654020	TRANSISTOR	2SC2058S-P
0 2007	260P632010	TRANSISTOR	DTC124ES
Q 2008	260P632010	TRANSISTOR	DTC124ES
Q 2501	260P560010	TRANSISTOR	2SA933S-R, S
Q 2502	260P832010	TRANSISTOR	DTC124ES
Q 2503	260P632010	TRANSISTOR	DTC124ES
Q 2504	260P560040	TRANSISTOR	2SA933S-S
Q 2505	260P582040	TRANSISTOR	2SA952-K
0 3A1	260P807010	CHIP TRANSISTOR	DTC124K
Q 3003	260P632010	TRANSISTOR	DTC124ES

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 3005	260P632010	TRANSISTOR	DTC124ES
0 3006	260P603010	TRANSISTOR	DTA124ES/UN4112
0 3007	260P632010	TRANSISTOR	DTC124ES
Q 3008	260P632010	TRANSISTOR	DTC124ES
0 3020	260P559040	TRANSISTOR	2SC1740S-R, S
Q 3200	280P632010	TRANSISTOR	DTC124ES
Q 3201	260P632010	TRANSISTOR	DTC124ES
Q 3202	260P603010	TRANSISTOR	DTA124ES/UN4112
Q 3203	260P559040	TRANSISTOR	2SC1740S-R, S
0 3204	260P559040	TRANSISTOR	2SC1740S-R, S
Q 3205	260P632010	TRANSISTOR	DTC124ES
Q 3206	260P560010	TRANSISTOR	2SA933S-R, S
Q 3207	260P632010	TRANSISTOR	DTC124ES
Q 3208	260P5G0010	TRANSISTOR	2SA933S-R, S
Q 3209	260P5G2040	TRANSISTOR	2SA952-K
0 3210	260P632010	TRANSISTOR	DTC124ES
Q 3306	260P559050	TRANSISTOR	2SC1740S-E
Q 3307	260P522020	TRANSISTOR	2SC3068-AA
Q 3308	260P522020	TRANSISTOR	2SC3068-AA
0 3309	260P603010	TRANSISTOR	DTA124ES/UN4112
0 3311	260P559040	TRANSISTOR	2SC1740S-R, S
0 3315	260P560010	TRANSISTOR	2SA933S-R, S
Q 3316	260C676040	TRANSISTOR	2SC3311A-R, S
Q 3317	260C676040	TRANSISTOR	2SC3311A-R, S
Q 3318	260P629060	TRANSISTOR	2SC3331-S, T, U
0 3319	260P632010	TRANSISTOR	DTC124ES
Q 3325	260P632010	TRANSISTOR	DTC124ES
Q 3406	260P559040	TRANSISTOR	2SC1740S-R, S [B, E, IR]
Q 3407	260P559040	TRANSISTOR	2SC1740S-R, S [B, E, IR]
Q 3408	260P559060	TRANSISTOR	2SC1740S-S, E
Q 3409	260P632010	TRANSISTOR	DTC124ES
0 4A1	260P459010	TRANSISTOR	2SK381-A
Q 4A3	260P559060	TRANSISTOR	2SC1740S-S, E
0 4A4	260P560040	TRANSISTOR	2SA933S-S
Q 4A5	260P806010	CHIP TRANSISTOR	DTA124EK
Q 4A7	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 4A8	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 4A9	260P806010	CHIP TRANSISTOR	DTA124EK
Q 4G0	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 4G1	2G0P560010	TRANSISTOR	2SA933S-R, S
0 4S0	2G0P802020	CHIP TRANSISTOR	2SA 1235-F
Q 501	280P802020	CHIP TRANSISTOR	2SA 1235-F
0 502	260P807010	CHIP TRANSISTOR	DTC124K
Q 503	260P602020	CHIP TRANSISTOR	2SA 1235-F
Q 504	260P559060	TRANSISTOR	2SC1740S-S, E
Q 506	260P802020	CHIP TRANSISTOR	2SA 1235-F [E, Y]
0 508	260P807010	CHIP TRANSISTOR	DTC124K
0 571	268P014020	PHOTO TRANSISTOR	PN205L-(NC)
Q 572	268P014020	PHOTO TRANSISTOR	PN205L-(NC)
Q 573	268P044010	PHOTO INTERRUPTER	QN2270-(LJ).MI
Q 574	268P044010	PHOTO INTERRUPTER	QN2270-(LJ).MI
Q 575	2G8P045010	PHOTO INTERRUPTER	GP1L52V
Q 581	2B0P455010	TRANSISTOR	DTC124EF
Q 582	260P455010	TRANSISTOR	DTC124EF
Q 583	260P455010	TRANSISTOR	DTC124EF
Q 5A0	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5A1	2B0P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5A2	260P802020	CHIP TRANSISTOR	2SA 1235-F
0 5A3	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5A4	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5A5	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5A6	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5A7	260P559060	TRANSISTOR	2SC1740S-S, E
0 5A8	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5A9	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5B0	260P586050	TRANSISTOR	2SB892-T, U
Q 5B1	260P566030	TRANSISTOR	2SD1682-T, U
Q 5B2	260P807010	CHIP TRANSISTOR	DTC124K
0 5B3	260P807010	CHIP TRANSISTOR	DTC124K
Q 5B4	260P807010	CHIP TRANSISTOR	DTC124K
Q 5B5	260P806010	CHIP TRANSISTOR	DTA124EK
Q 587	260P804020	CHIP TRANSISTOR	2SC3052-F
0 588	260P806010	CHIP TRANSISTOR	DTA124EK
Q 589	260P804020	CHIP TRANSISTDR	2SC3052-F
0 5C0	260P804020	CHIP TRANSISTOR	2SC3052-F
0 5C3	260P807010	CHIP TRANSISTOR	DTC124K
Q 5D1	260P807010	CHIP TRANSISTOR	DTC124K
0 5D7	260P807010	CHIP TRANSISTOR	DTC124K
Q 5D8	260P807010	CHIP TRANSISTOR	DTC124K
0 5D9	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5G0	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5G1	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5G2	260P809030	CHIP TRANSISTOR	2SC3053-D
Q 5G3	260P607010	CHIP TRANSISTDR	DTC124K
Q 5G4	260P607010	CHIP TRANSISTOR	DTC124K
Q 5G5	260P807010	CHIP TRANSISTOR	DTC124K
0 5G6	260P807010	CHIP TRANSISTOR	DTC124K
Q 5G7	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5G8	260P802020	CHIP TRANSISTOR	2SA 1235-F
Q 5G9	260P802020	CHIP TRANSISTOR	2SA 1235-F
0 5H0	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5H2	260P804020	CHIP TRANSISTOR	2SC3052-F
0 5H4	260P807010	CHIP TRANSISTOR	DTC124K
Q 5J0	260P804020	CHIP TRANSISTOR	2SC3052-F
Q 5J1	260P804020	CHIP TRANSISTOR	2SC3052-F
0 750	260P356010	TRANSISTOR	2SC1906 [Y]
0 751	260P543010	TRANSISTOR	JC501-P, Q [Y]
Q 752	260P544010	TRANSISTOR	JA101-P, Q [Y]
0 7A0	260P522010	TRANSISTOR	2SC3066 [B, E, IR]
Q 7A2	260P603010	TRANSISTOR	DTA124ES/UN4112 [B, E, IR]
Q 7A3	260P543010	TRANSISTOR	JC501-P, Q [B, E, IR]
0 7A4	260P543010	TRANSISTOR	JC501-P, Q [B, E, IR]
0 7A5	260P603010	TRANSISTOR	DTA124ES/UN4112 [B, E, IR]
0 7Y2	260P356010	TRANSISTOR	2SC1906 [B, E, IR]
Q 7Y4	260P544010	TRANSISTOR	JA101-P, Q [B, E, IR]
0 8A5	260P544010	TRANSISTOR	JA101-P, Q
0 8A8	260P559060	TRANSISTOR	2SC1740S-S, E
Q 8G0	260P544010	TRANSISTOR	JA101-P, Q [B]
0 8P0	260P544010	TRANSISTOR	JA101-P, Q

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
0 8P1	260P544010	TRANSISTOR	JA101-P, 0	
0 8P2	260P544010	TRANSISTOR	JA101-P, 0	
0 8P3	260P544010	TRANSISTOR	JA101-P, 0	
0 8P4	260P632010	TRANSISTOR	DTC124ES	[B, E, IR]
0 601	260P580010	TRANSISTOR	2SA933S-R, S	
0 902	260P628080	TRANSISTOR	2SA1619A-Q, R, S	
Q 903	260P560030	TRANSISTOR	2SA93SS-R, F	
Q 971	260P630010	TRANSISTOR	2SD2012	
Q 9A1	260P630010	TRANSISTOR	2SD2012	
Q 9A2	260P630010	TRANSISTOR	2SD2012	
Q 9A3	260P630010	TRANSISTOR	2SD2012	
Q 9A4	260P613010	TRANSISTOR	2SC4208A	

DIODES

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
D 101	264P628010	DIODE	BAT86	
D 202	264P568010	DIODE	1SS252	
D 2A3	264P588010	DIODE	1SS252	
D 2A6	264P568010	DIODE	1SS252	[E, Y]
D 2A8	264P568010	DIODE	1SS252	
D 2A9	264P568010	DIODE	1SS252	
D 2B0	264P568010	DIODE	1SS252	
D 2D0	264P568010	DIODE	1SS252	
D 2S0	264P568010	DIODE	1SS252	
D 2S1	264P588010	DIODE	1SS252	
D 2X0	264P568010	DIODE	1SS252	
D 2X1	264P568010	DIODE	1SS252	
D 2001	264P123030	DIODE	1SS99	
D 2002	264P123030	DIODE	1SS99	
D 3000	264P568010	DIODE	1SS252	
D 3001	264P568010	DIODE	1SS252	
D 3002	264P568010	DIOOE	1SS252	
D 3003	264P568010	DIODE	1SS252	
D 3005	264P568010	DIODE	1SS252	
D 3006	264P568010	DIODE	1SS252	
D 3007	264P568010	DIODE	1SS252	
D 3008	264P568010	DIODE	1SS252	
D 3020	264P568010	DIODE	1SS252	
D 3200	264P568010	DIODE	1SS252	
D 3201	264P568010	DIODE	1SS252	
D 3202	264P568010	DIODE	1SS252	
D 3203	264P568010	DIODE	1SS252	
D 3204	264P568010	DIODE	1SS252	
D 3205	264P568010	DIODE	1SS252	
D 3208	264P568010	DIODE	1SS252	
D 3207	264P568010	DIODE	1SS252	
D 3208	264P568010	DIODE	1SS252	
D 3302	264P568010	DIODE	1SS252	
D 3404	254P568010	DIODE	1SS252	
D 3405	264P568010	DIODE	1SS252	
D 3406	264P568010	DIODE	1SS252	
D 4A0	264P568010	DIODE	1SS252	
D 4A1	264P568010	DIODE	1SS252	
D 4A6	264P568010	DIODE	1SS252	
D 570	264P307020	LIGHT EMITTING DIODE	GL-451	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
D 571	264P518010	DIODE	MA165	
D 5A0	264P568010	DIODE	1SS252	
D 5A1	264P568010	DIODE	1SS252	
D 5A3	264P568010	DIODE	1SS252	
D 5A5	264P342070	DIODE	HZ4C2	
D 5A6	264P568010	DIODE	1SS252	
D 5A7	264P500020	DIODE	EM01Z	
D 5A8	264P502010	DIODE	HZ1B-2L	
D 5B0	264P568010	DIODE	1SS252	
D 5B2	264P568010	DIODE	1SS252	
D 5B4	264P808010	CHIP DIODE	DAN202K	
D 5B7	264P568010	DIODE	1SS252	
D 5B8	264P568010	DIODE	1SS252	
D 5B9	264P452030	DIODE	HZ5C3	
D 5C0	264P568010	DIODE	1SS252	
D 5C1	264P568010	DIODE	1SS252	
D 5C3	264P808010	CHIP DIODE	DAN202K	
D 5C5	264P568010	DIODE	1SS252	
D 5C6	264P568010	DIODE	1SS252	
D 5C8	264P808010	CHIP DIODE	DAN202K	
D 5D0	264P568010	DIODE	1SS252	
D 5H0	264P808010	CHIP DIODE	DAN202K	
D 5J0	264P568010	DIODE	1SS252	
D 5U0	264P568010	DIODE	1SS252	
D 5U1	264P568010	DIODE	1SS252	
D 701	264P630010	LIGHT EMITTING DIODE	GL3HD44	[B]
D 701	264P572010	LIGHT EMITTING DIODE	SEL 2210R	[E, IR, Y]
D 750	264P568010	DIODE	1SS252	[Y]
D 751	264P568010	DIODE	1SS252	[Y]
D 752	264P568010	DIODE	1SS252	[Y]
D 7A0	264P568010	DIODE	1SS252	[B, E, IR]
D 7A1	264P568010	DIODE	1SS252	[B, E, IR]
D 7A3	264P568010	DIODE	1SS252	[B, E, IR]
D 7A4	264P568010	DIODE	1SS252	[B, E, IR]
D 7A5	264P568010	DIODE	1SS252	[B, E, IR]
D 7A6	264P568010	DIODE	1SS252	[B, E, IR]
D 7A8	264P568010	DIODE	1SS252	[B, E, IR]
D 7A9	264P568010	DIODE	1SS252	[B, E, IR]
D 780	264P568010	DIODE	1SS252	[B, E, IR]
D 7B1	2G4P568010	DIODE	1SS252	[B, E, IR]
D 7B2	264P568010	DIODE	1SS252	[B, E, IR]
D 8A3	264P568010	DIODE	1SS252	
D 8A4	264P568010	DIODE	1SS252	
D 8A5	264P568010	DIODE	1SS252	
D 8A6	264P568010	DIODE	1SS252	
D 8A7	264P568010	DIODE	1SS252	
D 8A8	264P568010	DIODE	1SS252	
D 8B0	264P568010	DIODE	1SS252	
D 8B1	264P568010	DIODE	1SS252	
D 8B2	264P568010	DIODE	1SS252	
D 8B3	264P568010	DIODE	1SS252	
D 8C0	264P568010	DIODE	1SS252	
D 8G0	264P630010	LIGHT EMITTING DIODE	GL3HD44	[B]
D 8G0	264P572020	LIGHT EMITTING DIODE	SEL 2410E	[E, IR, Y]
D BG1	264P572010	LIGHT EMITTING DIODE	SEL 2210R	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
D 8G2	264P572010	LIGHT EMITTING DIODE	SEL 2210R	
D 8J0	264P568010	DIODE	1SS252	[B, IR]
D 8J4	264P568010	DIODE	1SS252	[B]
D 8J5	264P568010	DIODE	1SS252	[E]
D 8J6	264P568010	DIODE	1SS252	
D 8J8	264P588010	DIODE	1SS252	
D 8J9	264P568010	DIODE	1SS252	[Y]
D 8Z0	264P501040	DIODE	HZ3ALL	
D 8Z1	264P461080	DIODE	EQA02-06E/RD6. 2EB3	
D 8Z2	264P193080	DIODE	MZ309B2/HZ9B24	
D 901	264P430030	DIODE	DSA3A1 15M FORMING	
D 902	264P430030	DIODE	DSA3A1 15M FORMING	
D 903	264P430030	DIODE	DSA3A1 15M FORMING	
D 904	264P430030	DIODE	DSA3A1 15M FORMING	
D 905	264P430030	DIOOE	DSA3A1 15M FORMING	
D 906	264P430030	DIODE	DSA3A1 15M FORMING	
D 907	264P430030	DIODE	DSA3A1 15M FORMING	
0 908	264P430030	DIOOE	DSA3A1 15M FORMING	
D 913	264P500020	DIODE	EM01Z	
D 914	264P500020	DIOOE	EM01Z	
D 915	264P568010	DIODE	1SS252	
D 916	264P566010	DIODE	1SS252	
D 917	264P104040	DIODE	HZ30-2	
D 9A0	264P588010	DIODE	1SS252	

FILTERS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
BPF7A0	409P453010	BAND PASS FILTER		[B, IR]
BPF7A0	409P453020	BANO PASS FILTER	2080QDAF	[E]
CF101	296P024040	CERAMIC TRAP	TPS6. 0MD	[B, IH]
CF101	296P078010	CERAMIC TRAP		[E]
CF101	296P104010	CERAMIC TRAP	EFC-S3F01W3A	[Y]
CF151	296P014030	CERAMIC FILTER	SFE-6. 0MHz	[B, IR]
CF151	296P014090	CERAMIC FILTER	SFE-5. 5MC2	[E, Y]
CF5A0	299P118010	CERAMIC RESONATOR	KBR-4. 0KES	
CF750	296P071020	CERAMIC FILTER		[Y]
CF751	296P071010	CERAMIC FILTER		[Y]
CF752	296P118010	CERAMIC FILTER		[Y]
DL2A1	337P160010	COMB FILTER	EFD-VR645A45H	
SF 7Y1	296P112020	SAW FILTER	SAF32. 9MDE70Z	[B, IR]
SF101	296P119040	SAW FILTER	SAF39. 5MZG81Z	[B, IR]
SF101	296P119030	SAW FILTER		[E]
SF101	296P118010	SAW FILTER		[Y]
SF7Y1	296P112010	SAW FILTER	SAF33. 0MDA70Z	[E]

DELAY LINES

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
DL2A0	337P081020	DELAY LINE	HCF873	[B, E, IR]
DL2A0	337P081010	DELAY LINE		[Y]

COILS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
L 11	325C111030	PEAKING COIL	10μH-K	
L 103	323P17S090	VIF COIL	AFT 38. 9/39. 5MHz	
L 105	411P011010	BEADS FERRITE	ZBF503S-P	
L 107	325C170050	PEAKING COIL	2. 2μH-K SHIELD	
L 108	325C186030	PEAKING COIL	10μH-J	[B, E]
L 108	325C166050	PEAKING COIL	15μH-J	[IR]
L 108	325C166000	PEAKING COIL	5. 6μH-J	[Y]
L 109	325C166060	PEAKING COIL	18μH-J	
L 113	325C166020	PEAKING COIL	1. 2μH-J	[B]
L 113	325C165030	PEAKING COIL	1. 5μH-J	[E, IR, Y]
L 201	325C122050	PEAKING COIL	100μH-K	
L 206	325C166070	PEAKING COIL	22μH-J	
L 210	325C166070	PEAKING COIL	22μH-J	
L 211	325C166000	PEAKING COIL	5. 8μH-J	
L 213	325C167050	PEAKING COIL	100μH-J	
L 219	325C167040	PEAKING COIL	82μH-J	
L 220	325C167070	PEAKING COIL	150μH-J	
L 2A8	325C166060	PEAKING COIL	18μH-J	
L 2A9	325C167080	PEAKING COIL	180μH-J	
L 2B0	325C166090	PEAKING COIL	33μH-J	
L 2B1	325C1660G0	PEAKING COIL	18μH-J	
L 2B2	325C168010	PEAKING COIL	330μH-J	
L 2B4	325C165070	PEAKING COIL	3. 3μH-J	
L 2B5	325C166020	PEAKING COIL	8. 2MHJ	
L 2B6	325C166050	PEAKING COIL	15μH-J	
L 2B7	325C166050	PEAKING COIL	15μH-J	
L 2B8	321C112050	RF COIL	100μH-K	
L 2B9	321C112050	RF COIL	100μH-K	
L 2C0	325C122050	PEAKING COIL	100μH-K	
L 2C1	325C167010	PEAKING COIL	47μH-J	
L 2C2	325C166090	PEAKING COIL	33μH-J	
L 2C3	325C122050	PEAKING COIL	100μH-K	
L 2C6	325C121030	PEAKING COIL	10μH-K	[E, Y]
L 2P1	325C166090	PEAKING COIL	33μH-J	
L 2P5	325C166090	PEAKING COIL	33μH-J	
L 2P6	325C167010	PEAKING COIL	47μH-J	
L 2001	325C167050	PEAKING COIL	100μH-J	
L 2002	325C166020	PEAKING COIL	8. 2μH-J	
L 2004	325C166060	PEAKING COIL	18μH-J	
L 2005	325C167080	PEAKING COIL	180μH-J	
L 2006	325C166030	PEAKING COIL	10μH-J	
L 2007	325C167020	PEAKING COIL	58μH-J	
L 2501	325C262050	PEAKING COIL	100μH-K	
L 2502	325C166040	PEAKING COIL	12μH-J	
L 2503	325C16S090	PEAKING COIL	4. 7μH-J	
L 2504	325C167020	PEAKING COIL	58μH-J	
L 3A0	325C262050	PEAKING COIL	100μH-K	
L 3001	325C267050	PEAKING COIL	100μH-J	
L 3002	325C262050	PEAKING COIL	100μH-K	
L 3301	321C114080	RF COIL	8200μH-J	
L 3305	321C113070	RF COIL	1000μH-K	
L 3315	325C262050	PEAKING COIL	100μH-K	
L 3318	325C262080	PEAKING COIL	180μH-K SO	
L 3319	325C262050	PEAKING COIL	100μH-K	
L 4A0	325C262000	PEAKING COIL	39μH-K	
L 4G0	325C10S030	PEAKING COIL	470μH-J	
L 501	325C122050	PEAKING COIL	100μH-K	
L 502	325C166050	PEAKING COIL	15μH-J	
L 503	325C262050	PEAKING COIL	100μH-K	
L 507	325C266080	PEAKING COIL	27μH-J	[E, Y]
L 570	299P124010	LATCH MAGNET		

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
L 5A0	325C262050	PEAKING COIL	100 μH-K
L 5A1	325C124080	PEAKING COIL	0. 56 μH-M
L 5A2	325C124050	PEAKING COIL	0. 33 μH-M
L 5A3	325C124050	PEAKING COIL	0. 33 μH-M
L 5A5	325C187040	PEAKING COIL	82 μH-J
L 651	325C122050	PEAKING COIL	100 μH-K
L 750	325C267050	PEAKING COIL	100 μH-J [B, E, IR]
L 750	325C107050	PEAKING COIL	100 μH-J [Y]
L 753	325C166090	PEAKING COIL	33 μH-J [Y]
L 754	325C166090	PEAKING COIL	33 μH-J [Y]
L 7A0	325C107050	PEAKING COIL	100 μH-J [B, E, IR]
L 7A1	325C106040	PEAKING COIL	12 μH-J [B, E, IR]
L 7A2	325C106040	PEAKING COIL	12 μH-J [B, E, IR]
L 7A3	325C106090	PEAKING COIL	33 μH-J [B, E, IR]
L 7A4	411P001070	FERRITE LEAD	BF60T [B, E, IR]
L 7A5	325C107050	PEAKING COIL	100 μH-J [B, E, IR]
L 7A6	409P402090	EMI FILTER	DSS306-93FZ103N100 [B, E, IR]
L 7A7	325C107010	PEAKIN6 COIL	47 μH-J [B, E, IR]
L 7A8	325C120030	PEAKING CDIL	1. 5 μH-M [E]
L 7A9	325C267050	PEAKING COIL	100 μH-J [B, E, IR]
L 7B0	325C267050	PEAKING COIL	100 μH-J [B, E, IR]
L 7Y1	325C166040	PEAKING COIL	1. 8 μH-J [B, E, IR]
L 7Y2	325C162030	PEAKING COIL	68 μH-K [B, E, IR]
L 7Y3	323P1B4010	VIF COIL	[B, E, IR]
L 7Y4	325C166030	PEAKING COIL	10 μH-J [B, E, IR]
LC751	327P077010	SIF COIL	5. 74MHz [Y]
LC752	327P076010	SIP COIL	5. 5MHz [Y]

TRANSFORMERS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
T 3301	409P423030	AUDIO BIAS OSC	705720044D
T 901	350P577020	POWER	PRI 240V [B]
T 501	350P577010	POWER	PRI 220V [E, IR, Y]

VARIABLE RESISTORS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
VR101	127C08C090	VR-SEMIFIXED	1/5W 820kΩ-M
VR103	127C090040	VR-SEMIFIXED	1/5W 81kΩ-M
VR202	127C290040	VR-SEMIFIXED	1/10W 81kΩ-N
VR203	127C290080	VR-SEMIFIXED	1/10W B10kΩ-N
VR280	129D173060	VR-PCB	1/20W B3kΩ-25TM CS
VR2A0	127C080090	VR-SEMIFIXED	1/5W 820kΩ-M
VR2A1	127C090090	VR-SEMIFIXED	1/5W B20kΩ-M
VR2A2	127C080080	VR-SEMIFIXED	1/5W 810kΩ-M
VR2A3	127C080050	VR-SEMIFIXED	1/5W 82kΩ-M
VR2A5	127C080090	VR-SEMIFIXED	1/5W B20kΩ-M
VR3000	127C080030	VR-SEMIFIXED	1/5W B20kΩ-M
VR3001	127C080090	VR-SEMIFIXED	1/5W B20kΩ-M
VR3002	127C090080	VR-SEMIFIXED	1/5W B10kΩ-M
VR3003	127C090070	VR-SEMIFIXED	1/5W B5kΩ-M
VR3004	127C090040	VR-SEMIFIXED	1/5W B1kΩ-M
VR3010	127C180080	VR-SEMIFIXED	1/10W B10kΩ-M
VR3011	127C180080	VR-SEMIFIXED	1/10W B10kΩ-M
VR3311	127C181020	VR-SEMIFIXED	1/5W B100kΩ-M
VR4A0	127C081020	VR-SEMIFIXED	1/5W B100kΩ-M
VR652	127C080080	VR-SEMIFIXED	1/5W B10kΩ-M
VR751	127C080080	VR-SEMIFIXED	1/5W B10kΩ-M [Y]
VR752	127C081060	VR-SEMIFIXED	1/5W B1MΩ-M [Y]
VR753	127C081050	VR-SEMIFIXED	1/10W B500kΩ-N [Y]
VR754	127C081020	VR-SEMIFIXED	1/5W B100kΩ-M [Y]
VR756	127C080090	VR-SEMIFIXED	1/5W B20kΩ-M [Y]
VR7A0	127C091050	VR-SEMIFIXED	1/5W B500kΩ-M[B, E, IR]
VR8A0	129D159090	VR-PCB	1/20W C5kΩ-25TM CS
VR8A1	129D174040	VR-PCB	1/20W B200kΩ-25TM
VR8A2	129C126030	VR-PCB	1/40W A2K 15F

RESISTORS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 01	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 03	103P404000	CHIP RESISTOR	1/10W 18kΩ-J [B, IR, Y]
R 09	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 11	103P403070	CHIP RESISTOR	1/10W 10kΩ-J [E, IR, Y]
R 12	103P403070	CHIP RESISTOR	1/10W 10kΩ-J [E, IR, Y]
R 13	103P403070	CHIP RESISTOR	1/10W 10kΩ-J [E, IR, Y]
R 14	103P403020	CHIP RESISTOR	1/10W 3. 9kΩ-J[E, IR, Y]
R 18	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 19	103P475080	CHIP RESISTOR	1/10W 20kΩ-F
R 22	103P409050	CHIP RESISTOR	1/10W 0Ω
R 23	103P409050	CHIP RESISTOR	1/10W 0Ω
R 24	103P406050	CHIP RESISTOR	1/10W 0Ω
R 25	103P409050	CHIP RESISTOR	1/10W 0Ω
R 29	103P409050	CHIP RESISTOR	1/10W 0Ω
R 31	103P409050	CHIP RESISTOR	1/10W 0Ω
R 101	103P472040	CHIP RESISTOR	1/10W 910Ω-F [B, IR]
R 101	103P472030	CHIP RESISTOR	1/10W 820Ω-F [E]
R 101	103P473040	CHIP RESISTOR	1/10W 2. 4kΩ-F [Y]
R 103	103P402000	CHIP RESISTOR	1/10W 390Ω-J
R 104	103P403050	CHIP RESISTOR	1/10W 6. 8kΩ-J
R 108	103P404020	CHIP RESISTOR	1/10W 27kΩ-J
R 109	103P404020	CHIP RESISTOR	1/10W 27kΩ-J
R 113	103P471060	CHIP RESISTOR	1/10W 430Ω-F [B, E, Y]
R 113	103P472040	CHIP RESISTOR	1/10W 910Ω-F [IR]
R 115	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 116	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 117	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 118	103P474050	CHIP RESISTOR	1/10W 6. 8K [B]
R 118	103P472070	CHIP RESISTOR	1/10W 1. 2kΩ-F [E]
R 118	103P472020	CHIP RESISTOR	1/10W 750Ω-F [IR]
R 118	103P473040	CHIP RESISTOR	1/10W 2. 4kΩ-F [Y]
R 120	103P402090	CHIP RESISTOR	1/10W 2. 2kΩ-J
R 121	103P472090	CHIP RESISTOR	1/10W 1. 5kΩ-F
R 122	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 123	103P472070	CHIP RESISTOR	1/10W 1. 2kΩ-F [B]
R 123	103P471050	CHIP RESISTOR	1/10W 390Ω-F [E]
R 123	103P471080	CHIP RESISTOR	1/10W 510Ω-F [IR]
R 123	103P471000	CHIP RESISTOR	1/10W 240Ω-F [Y]
R 126	103P404050	CHIP RESISTOR	1/10W 47kΩ-J [Y]
R 127	103P404050	CHIP RESISTOR	1/10W 47kΩ-J [Y]
R 128	103P401090	CHIP RESISTOR	1/10W 330Ω-J [Y]
R 129	103P401030	CHIP RESISTOR	1/10W 100Ω-J [Y]
R 153	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 160	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 162	103P404000	CHIP RESISTOR	1/10W 18kΩ-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 1J1	103P409050	CHIP RESISTOR	1/10W 0Ω [IR, Y]
R 1J2	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1J3	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1J5	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1M0	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1N0	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1N1	103P404050	CHIP RESISTOR	1/10W 47kΩ-J [B, E, IR]
R 1N2	103P404050	CHIP RESISTOR	1/10W 47kΩ-J [B, E, IR]
R 1N3	103P401090	CHIP RESISTOR	1/10W 330Ω-J [B, E, IR]
R 1N4	103P401030	CHIP RESISTOR	1/10W 100Ω-J [B, E, IR]
R 1N5	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1N7	103P409050	CHIP RESISTOR	1/10W 0Ω
R 1N8	103P409050	CHIP RESISTOR	1/10W 0Ω
R 201	103P409050	CHIP RESISTOR	1/10W 0Ω
R 203	103P409050	CHIP RESISTOR	1/10W 0Ω
R 204	103P409050	CHIP RESISTOR	1/10W 0Ω
R 205	103P409050	CHIP RESISTOR	1/10W 0Ω
R 206	103P402060	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 1.2kΩ-J
R 206	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 207	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 208	103P402000	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 390Ω-J
R 208	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 209	103P401030	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 100Ω-J
R 209	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 210	103P401020	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 62Ω-J
R 210	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 211	103P409050	CHIP RESISTOR	1/10W 0Ω
R 212	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 213	103P409050	CHIP RESISTOR	1/10W 0Ω
R 214	103P401030	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 100Ω-J
R 214	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 215	103P409050	CHIP RESISTOR	1/10W 0Ω
R 216	103P401030	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 100Ω-J
R 216	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 217	103P401060	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 160Ω-J
R 217	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 218	103P401090	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 330Ω-J
R 218	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω
R 219	103P402020	CHIP RESISTOR (HEAD-AMP PCB ASSY)	1/10W 560Ω-J
R 219	103P409050	CHIP RESISTOR (Y/C PCB ASSY)	1/10W 0Ω

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 220	103P409050	CHIP RESISTOR	1/10W 0Ω
R 221	103P409050	CHIP RESISTOR	1/10W 0Ω
R 222	103P409050	CHIP RESISTOR	1/10W 0Ω
R 223	103P409050	CHIP RESISTOR	1/10W 0Ω
R 224	103P409050	CHIP RESISTOR	1/10W 0Ω
R 225	103P409050	CHIP RESISTOR	1/10W 0Ω
R 226	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 242	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 243	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 285	103P406090	CHIP RESISTOR	1/10W 680kΩ-J [B, E]
R 285	103P406060	CHIP RESISTOR	1/10W 330kΩ-J [IR, Y]
R 286	103P405000	CHIP RESISTOR	1/10W 120kΩ-J
R 287	103P471030	CHIP RESISTOR	1/10W 330Ω-F
R 288	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 291	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J [B, E, IR]
R 299	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2D2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2D3	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 2D4	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 2D5	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2D6	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2D7	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2D8	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2E1	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2E2	103P401060	CHIP RESISTOR	1/10W 180Ω-J
R 2E3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2E5	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 2E6	103P403020	CHIP RESISTOR	1/10W 3.9kΩ-J
R 2E7	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 2E8	103P404040	CHIP RESISTOR	1/10W 39kΩ-J
R 2E9	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 2F0	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 2F1	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2F2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2F3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2F4	103P403090	CHIP RESISTOR	1/10W 15kΩ-J
R 2F5	103P401050	CHIP RESISTOR	1/10W 160Ω-J
R 2F6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2F7	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 2F8	103P473080	CHIP RESISTOR	1/10W 3.6kΩ-F
R 2G0	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2G1	103P403020	CHIP RESISTOR	1/10W 3.9kΩ-J
R 2G2	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 2G3	103P402020	CHIP RESISTOR	1/10W 660Ω-J
R 264	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2G7	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2G8	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 269	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J
R 2H1	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2H2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2H4	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2H5	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 2H6	103P402050	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2H7	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 2H9	103P404040	CHIP RESISTOR	1/10W 39kΩ-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 2J2	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 2J3	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 2J4	103P402050	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2J5	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2J6	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2J7	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2J8	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 2J9	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 2K1	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 2K4	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2K7	103P470060	CHIP RESISTOR	1/10W 160Ω-F
R 2L7	103P409090	CHIP RESISTOR	1/10W 75Ω-J
R 2L9	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 2M0	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 2M2	103P405040	CHIP RESISTOR	1/10W 270kΩ-J
R 2M3	103P474020	CHIP RESISTOR	1/10W 5.1kΩ-F
R 2P2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 2P3	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 2P4	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 2P5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 2P6	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2P7	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2P9	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 2R2	103P404040	CHIP RESISTOR	1/10W 39kΩ-J
R 2R5	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 2R7	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2R9	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 2S5	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 2S6	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2T1	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2T3	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2T4	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2T5	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 2T6	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 2T7	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2X1	103P409050	CHIP RESISTOR	1/10W 0Ω
R 2X4	103P402040	CHIP RESISTOR	1/10W 820Ω-J
R 2X5	103P403060	CHIP RESISTOR	1/10W 8.2kΩ-J
R 3A0	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 3A3	103P401060	CHIP RESISTOR	1/10W 180Ω-J
R 3A4	103P401060	CHIP RESISTOR	1/10W 160Ω-J
R 3A5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 3A6	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 3A7	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 3A8	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 3A9	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 3B0	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 3B1	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 3B2	103P474060	CHIP RESISTOR	1/10W 7.5kΩ-F
R 3B3	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 3B4	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 3B6	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 3B7	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 4A1	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F
R 4A2	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 4A3	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 4A4	103P474030	CHIP RESISTOR	1/10W 5.6kΩ-F
R 4A5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4A9	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 4B1	103P401010	CHIP RESISTOR	1/10W 68Ω-J
R 4B2	103P476050	CHIP RESISTOR	1/10W 18kΩ-F
R 4B3	103P474010	CHIP RESISTOR	1/10W 4.7kΩ-F
R 4B4	103P474090	CHIP RESISTOR	1/10W 10kΩ-F
R 4B5	103P479030	CHIP METAL	1/10W 680kΩ-F
R 4B6	103P476070	CHIP RESISTOR	1/10W 56kΩ-F
R 4B7	103P476070	CHIP RESISTOR	1/10W 56kΩ-F
R 4B8	103P476010	CHIP RESISTOR	1/10W 33kΩ-F
R 4B9	103P477070	CHIP RESISTOR	1/10W 150kΩ-F
R 4C0	103P476010	CHIP RESISTOR	1/10W 220kΩ-F
R 4C1	103P477070	CHIP RESISTOR	1/10W 150kΩ-F
R 4C2	103P476050	CHIP RESISTOR	1/10W 330kΩ-F
R 4C3	103P476030	CHIP RESISTOR	1/10W 39kΩ-F
R 4C5	103P474010	CHIP RESISTOR	1/10W 4.7kΩ-F
R 4C8	103P472030	CHIP RESISTOR	1/10W 620Ω-F
R 4C9	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 4D0	103P476020	CHIP METAL	1/10W 240kΩ-F
R 401	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 402	103P404000	CHIP RESISTOR	1/10W 16kΩ-J
R 4D3	103P473010	CHIP RESISTOR	1/10W 1.8kΩ-F
R 4D4	103P406070	CHIP RESISTOR	1/10W 470kΩ-J
R 405	103P477010	CHIP RESISTOR	1/10W 62kΩ-F
R 4D6	103P474090	CHIP RESISTOR	1/10W 10kΩ-F
R 4D7	103P403050	CHIP RESISTOR	1/10W 6.8kΩ-J
R 409	103P474070	CHIP RESISTOR	1/10W 6.2kΩ-F
R 4E0	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4E2	103P472070	CHIP RESISTOR	1/10W 1.2kΩ-F
R 4E3	103P472070	CHIP RESISTOR	1/10W 1.2kΩ-F
R 4E4	103P404020	CHIP RESISTOR	1/10W 27kΩ-J
R 4E5	103P473050	CHIP RESISTOR	1/10W 2.7kΩ-F
R 4E6	103P404020	CHIP RESISTOR	1/10W 27kΩ-J
R 4E7	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 4E8	103P473060	CHIP RESISTOR	1/10W 3kΩ-F
R 4E9	103P404020	CHIP RESISTOR	1/10W 27kΩ-J
R 4F2	103P402060	CHIP RESISTOR	1/10W 1.2kΩ-J
R 4F3	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 4F4	103P404000	CHIP RESISTOR	1/10W 16kΩ-J
R 4C0	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F
R 4G1	103P473070	CHIP RESISTOR	1/10W 3.3kΩ-F
R 4G2	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F
R 463	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F
R 4G5	103P477030	CHIP RESISTOR	1/10W 100kΩ-F
R 4H0	103P475070	CHIP RESISTOR	1/10W 22kΩ-F
R 4H1	103P475050	CHIP RESISTOR	1/10W 18kΩ-F
R 400	103P409050	CHIP RESISTOR	1/10W 0Ω
R 401	103P409050	CHIP RESISTOR	1/10W 0Ω
R 402	103P409050	CHIP RESISTOR	1/10W 0Ω
R 4R2	103P409050	CHIP RESISTOR	1/10W 0Ω
R 4R7	103P409050	CHIP RESISTOR	1/10W 0Ω
R 4R8	103P409050	CHIP RESISTOR	1/10W 0Ω
R 4R9	103P409050	CHIP RESISTOR	1/10W 0Ω

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 4S0	103P472050	CHIP RESISTOR	1/10W 1kΩ-F
R 4S1	103P409050	CHIP RESISTOR	1/10W 0Ω
R 503	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 505	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 506	103P472060	CHIP RESISTOR	1/10W 1.1kΩ-F
R 508	103P409050	CHIP RESISTOR	1/10W 0Ω
R 509	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 510	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 511	103P403080	CHIP RESISTOR	1/10W 8.2kΩ-J
R 512	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 513	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 523	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 527	103P404000	CHIP RESISTOR	1/10W 15kΩ-J
R 528	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 530	103P409050	CHIP RESISTOR	1/10W 0Ω [B, IR]
R 530	103P402000	CHIP RESISTOR	1/10W 390Ω-J [E, Y]
R 532	103P403080	CHIP RESISTOR	1/10W 12kΩ-J [E, Y]
R 533	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 590	103P409050	CHIP RESISTOR	1/10W 0Ω
R 591	103P409050	CHIP RESISTOR	1/10W 0Ω
R 592	103P409050	CHIP RESISTOR	1/10W 0Ω
R 593	103P409050	CHIP RESISTOR	1/10W 0Ω
R 594	103P409050	CHIP RESISTOR	1/10W 0Ω
R 595	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5A0	103P395090	FUSE	1/2W 5.6Ω-J [B]
R 5A3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5A4	103P404070	CHIP RESISTOR	1/10W 68kΩ-J
R 5A5	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 5A6	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5A7	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5A8	103P402030	CHIP RESISTOR	1/10W 660Ω-J
R 5A9	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 580	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 5B1	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5B3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 504	103P474090	CHIP RESISTOR	1/10W 10kΩ-F
R 5B6	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5B8	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 5C1	103P403040	CHIP RESISTOR	1/10W 5.6kΩ-J
R 5C2	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 5C4	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5C5	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 5C6	103P405030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5C7	103P403090	CHIP RESISTOR	1/10W 15kΩ-J
R 5C8	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5D0	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 501	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5D2	103P405000	CHIP RESISTOR	1/10W 120kΩ-J
R 503	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5D4	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5D6	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5D8	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5D9	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 5E1	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5E2	103P473030	CHIP RESISTOR	1/10W 2.2kΩ-F

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 5E3	103P474070	CHIP RESISTOR	1/10W 8.2kΩ-F
R 5E4	103P401020	CHIP RESISTOR	1/10W 82Ω-J
R 5E5	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 5E6	103P470010	CHIP RESISTOR	1/10W 100Ω-F
R 5E7	103P470060	CHIP RESISTOR	1/10W 180Ω-F
R 5E6	103P471050	CHIP RESISTOR	1/10W 390Ω-F
R 5E9	103P471050	CHIP RESISTOR	1/10W 390Ω-F
R 5F0	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5F1	103P405070	CHIP RESISTOR	1/10W 470kΩ-J
R 5F2	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 5F4	103P405070	CHIP RESISTOR	1/10W 470kΩ-J
R 5F5	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 5F6	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5F7	103P474090	CHIP RESISTOR	1/10W 10kΩ-F
R 5F8	103P475070	CHIP RESISTOR	1/10W 22kΩ-F
R 5F9	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5G0	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5G1	103P404070	CHIP RESISTOR	1/10W 68kΩ-J
R 5G2	103P402020	CHIP RESISTOR	1/10W 560Ω-J
R 5G3	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5G4	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5G5	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5G6	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5H0	103P473060	CHIP RESISTOR	1/10W 3kΩ-F
R 5H3	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5H4	103P404040	CHIP RESISTOR	1/10W 39kΩ-J
R 5H5	103P472080	CHIP RESISTOR	1/10W 1.3kΩ-F
R 5H6	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5H7	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5H8	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5H9	103P405010	CHIP RESISTOR	1/10W 160kΩ-J
R 5J0	103P474010	CHIP RESISTOR	1/10W 4.7kΩ-F
R 5J2	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 5J3	103P404050	CHIP RESISTOR	1/10W 47kΩ-J
R 5J4	103P403050	CHIP RESISTOR	1/10W 6.6kΩ-J
R 5K1	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 5K4	103P402000	CHIP RESISTOR	1/10W 390Ω-J
R 5K5	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5L0	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5L1	103P473090	CHIP RESISTOR	1/10W 3.9kΩ-F
R 5L2	103P474030	CHIP RESISTOR	1/10W 6.6kΩ-F
R 5L3	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5L4	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5L5	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 5L6	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5L7	103P405050	CHIP RESISTOR	1/10W 330kΩ-J
R 5L8	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5M2	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5M3	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 5M4	103P403080	CHIP RESISTOR	1/10W 12kΩ-J
R 5M5	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5M6	103P404090	CHIP RESISTOR	1/10W 100kΩ-J
R 5M7	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5N0	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5N2	103P404090	CHIP RESISTOR	1/10W 100kΩ-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 5N3	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 5N8	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5P0	103P403070	CHIP RESISTOR	1/10W 10kΩ-J
R 5P2	103P472080	CHIP RESISTOR	1/10W 1.3kΩ-F
R 5P3	103P403010	CHIP RESISTOR	1/10W 3.3kΩ-J
R 5P4	103P401080	CHIP RESISTOR	1/10W 270Ω-J
R 5P5	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 5P8	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 500	103P409050	CHIP RESISTOR	1/10W 0Ω
R 502	103P409050	CHIP RESISTOR	1/10W 0Ω
R 504	103P409050	CHIP RESISTOR	1/10W 0Ω
R 506	103P409050	CHIP RESISTOR	1/10W 0Ω
R 508	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5R3	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5R4	103P409050	CHIP RESISTOR	1/10W 0Ω
R ES0	103P409050	CHIP RESISTOR	1/10W 0Ω
R ES2	103P409050	CHIP RESISTOR	1/10W 0Ω
R ES4	103P409050	CHIP RESISTOR	1/10W 0Ω
R ES6	103P409050	CHIP RESISTOR	1/10W 0Ω
R ES7	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T0	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T2	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T3	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T4	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T5	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T6	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5T7	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5U0	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5U1	103P403000	CHIP RESISTOR	1/10W 2.7kΩ-J
R 5U2	103P402090	CHIP RESISTOR	1/10W 2.2kΩ-J
R 5U3	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 5U4	103P403030	CHIP RESISTOR	1/10W 4.7kΩ-J
R 5U7	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 5U8	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5U9	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5V0	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5V1	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5V3	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5V4	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5V5	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5V8	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5W1	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5W2	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5W3	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5W4	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5W5	103P409050	CHIP RESISTOR	1/10W 0Ω
R 5W8	103P409050	CHIP RESISTOR	1/10W 0Ω
R 651	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R B52	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 653	103P404000	CHIP RESISTOR	1/10W 18kΩ-J
R 654	103P404030	CHIP RESISTOR	1/10W 33kΩ-J
R 655	103P404010	CHIP RESISTOR	1/10W 22kΩ-J
R 656	103P402070	CHIP RESISTOR	1/10W 1.5kΩ-J
R 657	103P402030	CHIP RESISTOR	1/10W 680Ω-J
R 658	103P402030	CHIP RESISTOR	1/10W 680Ω-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 662	103P402050	CHIP RESISTOR	1/10W 1kΩ-J
R 902	109P052050	FUSE	1/4W 6.8Ω-J
R 905	109P052010	FUSE	1/4W 100Ω-J

CAPACITORS AND TRIMMERS

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
C 01	141P139030	CHIP CAPACITOR	B25V 0.1μF-K
C 101	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 102	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 103	141P139030	CHIP CAPACITOR	825V 0.1μF-K
C 108	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 109	141P139030	CHIP CAPACITOR	B25V 0.1μF-K
C 111	154P331030	CHIP CAPACITOR	CH50V 12pF-J
C 115	154P322060	CHIP CAPACITOR	SL50V 39pF-J
C 119	154P323060	CHIP CAPACITOR	SL50V 100pF-J [B]
C 119	154P324020	CHIP CAPACITOR	SL50V 180pF-J [E, IR]
C 119	154P325000	CHIP CAPACITOR	SL50V 390pF-J [Y]
C 121	154P331010	CHIP CAPACITOR	CH50V 10pF-C [B, IR]
C 121	154P330080	CHIP CAPACITOR	CH50V 7pF-C [E, Y]
C 1N1	141P132010	CHIP CAPACITOR	850V 0.01μF-K [B, E, IR]
C 201	154P332070	CHIP CAPACITOR	CH50V 47pF-J
C 202	154P332010	CHIP CAPACITOR	CH50V 27pF-J
C 207	154P323020	CHIP CAPACITOR	SL50V 68pF-J
C 209	141P139030	CHIP CAPACITOR	B25V 0.1μF-K
C 210	141P137080	CHIP CAPACITOR	B25V 0.047μF-K
C 211	141P137080	CHIP CAPACITOR	825V 0.047μF-K
C 215	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 216	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 220	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 221	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 234	154P331050	CHIP CAPACITOR	CH50V 15pF-J
C 236	154P331050	CHIP CAPACITOR	CH50V 15pF-J
C 249	154P323040	CHIP CAPACITOR	SL50V 82pF-J
C 255	154P322040	CHIP CAPACITOR	SL50V 33pF-J
C 256	154P324020	CHIP CAPACITOR	SL50V 180pF-J
C 270	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 275	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
C 290	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 299	141P130090	CHIP CAPACITOR	B50V 1000pF-K
C 2C1	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2C2	154P322080	CHIP CAPACITOR	SL50V 39pF-J
C 2C3	154P325000	CHIP CAPACITOR	SL50V 390pF-J
C 2C4	154P325020	CHIP CAPACITOR	SL50V 470pF-J
C 2C5	154P323020	CHIP CAPACITOR	SL50V 88pF-J
C 2C8	164P324000	CHIP CAPACITOR	SL50V 150pF-J
C 2C9	154P324000	CHIP CAPACITOR	SL50V 150pF-J
C 2D1	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2D2	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2D4	154P324040	CHIP CAPACITOR	SL50V 220pF-J
C 2D7	154P325000	CHIP CAPACITOR	SL50V 390pF-J
C 2E0	154P322080	CHIP CAPACITOR	SL50V 47pF-J
C 2E1	154P322000	CHIP CAPACITOR	SL50V 22pF-J
C 2E3	141P132000	CHIP CAPACITOR	B50V 8200pF-K
C 2E4	141P137040	CHIP CAPACITOR	B25V 0.022μF-K
C 2F4	141P137080	CHIP CAPACITOR	B25V 0.047μF-K
C 2F5	154P322080	CHIP CAPACITOR	SL50V 47pF-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
C 2F7	141P139030	CHIP CAPACITOR	B25V 0.1 μF-K	
C 2G4	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 2G5	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 2G7	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 2H0	154P322020	CHIP CAPACITOR	SL50V 27pF-J	
C 2H1	154P322040	CHIP CAPACITOR	SL50V 33pF-J	
C 2H2	154P320080	CHIP CAPACITOR	SL50V 6pF-C	
C 2H3	154P322080	CHIP CAPACITOR	SL50V 47pF-J	
C 2H7	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 2J9	154P323080	CHIP CAPACITOR	SL50V 120pF-J	[E, Y]
C 2P2	154P322060	CHIP CAPACITOR	SL50V 39pF-J	
C 2P3	154P323020	CHIP CAPACITOR	SL50V 68pF-J	
C 2P5	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 2P8	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 2R0	154P322020	CHIP CAPACITOR	SL50V 27pF-J	
C 2R1	154P322000	CHIP CAPACITOR	SL50V 22pF-J	
C 2R2	141P137040	CHIP CAPACITOR	825V 0.022 μF-K	
C 2R3	141P137080	CHIP CAPACITOR	B25V 0.047 μF-K	
C 2R4	154P323060	CHIP CAPACITOR	SL50V 100pF-J	
C 2R5	141P139030	CHIP CAPACITOR	B25V 0.1 μF-K	
C 2X4	154P324060	CHIP CAPACITOR	SL50V 270pF-J	
C 2X9	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 3A1	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 3A2	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 3A5	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 3A6	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 3A7	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 3A9	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 3B2	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 303	154P325020	CHIP CAPACITOR	SL50V 470pF-J	
C 3B4	154P325020	CHIP CAPACITOR	SL50V 470pF-J	
C 3C0	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 4B3	141P132000	CHIP CAPACITOR	850V 8200pF-K	
C 4B4	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 4B6	141P131030	CHIP CAPACITOR	B50V 2200pF-K	
C 4C4	141P1300G0	CHIP CAPACITOR	B50V 560pF-K	
C 4C9	141P130090	CHIP CAPACITOR	B50V 1000pF-K	
C 4D5	141P130090	CHIP CAPACITOR	B50V 1000pF-K	
C 4D8	141P131050	CHIP CAPACITOR	B50V 3300pF-K	
C 4E0	154P324020	CHIP CAPACITOR	SL50V 180pF-J	
C 4G0	141P139030	CHIP CAPACITOR	B25V 0.1 μF-K	
C 4G1	141P132010	CHIP CAPACITOR	B50V 0.01 μF-K	
C 501	154P330060	CHIP CAPACITOR	CH50V 5pF-C	
C 502	154P330060	CHIP CAPACITOR	CH50V 5pF-C	
C 505	154P332010	CHIP CAPACITOR	CH50V 27pF-J	
C 507	154P332010	CHIP CAPACITOR	CH50V 27pF-J	
C 510	141P137080	CHIP CAPACITOR	825V 0.047 μF-K	
C 512	141P133080	CHIP CAPACITOR	F50V 0.01 μF-Z	
C 514	141P133080	CHIP CAPACITOR	F50V 0.01 μF-Z	
C 524	141P131010	CHIP CAPACITOR	B50V 1500pF-K	
C 525	154P322080	CHIP CAPACITOR	SL50V 47pF-J	[E, Y]
C 5A0	141P131020	CHIP CAPACITOR	B50V 1800pF-K	
C 5A1	141P131030	CHIP CAPACITOR	B50V 2200pF-K	
C 5A3	141P133090	CHIP CAPACITOR	F50V 0.022 μF-Z	
C 5A4	154P324060	CHIP CAPACITOR	SL50V 270pF-J	

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
C 5A5	154P331D50	CHIP CAPACITOR	CH50V 15pF-J	
C 5A6	154P331050	CHIP CAPACITOR	CH50V 15pF-J	
C 5A7	141P133080	CHIP CAPACITOR	F50V 0.01 μF-Z	
C 5B0	154P332030	CHIP CAPACITOR	CH50V 33pF-J	
C 5B7	189P197020	C-ELE-DBL-LAYER	AC310G473Z5R5	
C 5E0	141P133090	CHIP CAPACITOR	F50V 0.022 μF-Z	
C 5E1	141P133090	CHIP CAPACITOR	F50V 0.022 μF-Z	
C 5F8	141P133090	CHIP CAPACITOR	F50V 0.022 μF-Z	
C 5F9	141P133090	CHIP CAPACITOR	F50V 0.022 μF-Z	
C 5G1	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 5G2	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 5H1	141P133080	CHIP CAPACITOR	F50V 0.01 μF-Z	
C 5U1	141P133080	CHIP CAPACITOR	F50V 0.01 μF-Z	
C 653	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 656	141P132000	CHIP CAPACITOR	B50V 6200pF-K	
C 659	154P323040	CHIP CAPACITOR	SL50V 82pF-J	
C 660	141P132000	CHIP CAPACITOR	B50V 8200pF-K	
C 661	141P132000	CHIP CAPACITOR	B50V 6200pF-K	
C 662	141P132000	CHIP CAPACITOR	B50V 6200pF-K	
C 663	154P332090	CHIP CAPACITOR	CH50V 56pF-J	
C 664	154P332090	CHIP CAPACITOR	CH50V 56pF-J	
C 905	1850065050	ELECTROLYTIC-C	H25V 3300 μF-M	
C 906	185D063040	ELECTROLYTIC-C	H25V 4700 μF-M 105C	
VC8A0	202P109020	TRIMMER CAPACITOR	4.2pF-20pF	

SWITCHES

5 701	432P089040	KEY BOARD SWITCH	POWER	
S 702	432P089040	KEY BOARD SWITCH	EJECT	
S 704	431C079040	SLIDE SWITCH	INTELLIGENT PICTURE	
S 705	431C079020	SLIDE SWITCH	NICAM	[B, E, IR]
S 706	431C079020	SLIDE SWITCH	MIX	
S 707	431C079020	SLIDE SWITCH	SIMUL	
S 8A3	432P089040	KEY BOARD SWITCH	CH-UP	
S 8A5	432P089040	KEY BOARD SWITCH	REPEAT PLAY	
S 8A6	432P089040	KEY BOARD SWITCH	PB	
S 8B3	432P089040	KEY BOARD SWITCH	CH-DOWN	
S 8B4	432P089040	KEY BOARD SWITCH	TAPE SPEED	
S 8B5	432P089040	KEY BOARD SWITCH	S-OTR	
S 8B6	432P089040	KEY BOARD SWITCH	REC	
S 887	432P0B9040	KEY BOARD SWITCH	STOP	
S 8C5	432P089040	KEY BOARD SWITCH	OTR	
S 8C6	432P089040	KEY BOARD SWITCH	FF	
S 8C7	432P089040	KEY BOARD SWITCH	STILL/PAUSE	
S 8C8	432P089040	KEY BOARD SWITCH	REW	
S 8D3	432P089040	KEY BOARD SWITCH	DISPLAY	
S 8D5	432P089040	KEY BOARD SWITCH	ONE KEY PRGGRAM	
S 8D7	432P089040	KEY BOARD SWITCH	INS	
S 8D8	432P089040	KEY BOARD SWITCH	AFR	
S 8R0	432P089040	KEY DOARD SWITCH	RESET	
SW570	439P019020	MODE SELECT SWITCH		[E, IR, Y]
SW571	439P020010	LIMIT SWITCH	SPPB-62	

MISCELLANEOUS

	242D297020	IF CABLE		
CU 01	295P276020	RF CONVERTER	MDLK6B7	[B, IR]

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
CU 01	295P27S010	RF CONVERTER	[E, Y]
DC CC	243C061020	CARD LEAD	9P L=150(DC-CC)
DM CM	243C061090	CARD LEAD	17P L150(DM-CM)
F 901	283D046080	FUSE	0. 63A-T
F 902	283D047050	FUSE	2. 5A-T
F 903	283D047050	FUSE	2. 5A-T
J 101	451P032010	PIN JAQK	[B, E, IR]
J 1N1	451PC32010	PIN JAQK	[B, E, IR]
J 2A0	440C183010	PIN JAQK(4P)	
J 2A1	451C096030	PIN JACK	BLACK
J 2001	451C058020	CONNECTOR	21P
J 701	451C102010	MICROPHONE JACK	
J 7Y1	451PC32010	PIN JACK	[B, E, IR]
K 3301	287P020050	RELAY	MZ9HS-B
M 470	288P116010	CAPSTAN MOTOR	F20KB78
M 570	288P086040	ORUM MOTOR	
M 571	288D026010	LOADIN6 MOTOR	
MF TF	243C022010	CARD LEAD	11P L248(MF-TF)
MK TK	243C066010	CARD LEAD	25P L250(CO-MQ)
MH HR	243C061020	CARD LEAD	9P L=150(DC-CC)
MV HV	243C011070	CARD LEAD	13P L140(MV-HV)
MX PX	243C073010	CARD LEAD	9P L=130(MX-PX)
T 370	460P080050	HEAD	
T 371	460P061020	FE HEAD	
TT HT	243C065040	CARD LEAD	13P L120(TT-HT)
TU 01	295P194030	TUNER	TERB1-054A [B]
TU 01	295P261020	TUNER	ENV-57819F1C [E]
TU 01	295P260030	TUNER	ENV-59808F2 [IR]
TU 01	295P297010	TUNER	TERE1-0J9A [Y]
V 8A0	263P08S020	TUBE FLUOR	FIP11AMW11
X 2A0	285P083010	CRYSTAL RESONATOR	4. 43362MHz
X 501	285P084010	CRYSTAL RESONATOR	17. 7345MHz
X 7A0	285P091010	CRYSTAL RESONATOR	6. 552MHz [B, IR]
X 7A0	285P092010	CRYSTAL RESONATOR	5. 85MHz [E]
X 7A1	285P154010	CRYSTAL RESONATOR	11. 648MHz [B, E, IR]
X 7A2	285P094010	CRYSTAL RESONATOR	SS768 [B, E, IR]
X 8A0	285P063040	CRYSTAL RESONATOR	4. 19430MHz
X 8A1	285P054010	CRYSTAL RESONATOR	32. 768kHz
Z 8A0	939P481020	PREAMP UNIT	HC-479M

PRINTED CIRCUIT BOARD ASSY'S

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
	928C59S001	DECK PCB ASSY	
	927B449002	HEAD-AMP PCB ASSY	[B, IR]
	927B449001	HEAD-AMP PCB ASSY	[E, Y]
	927B631002	Hi-Fi PCB ASSY	[B]
	927B031003	Hi-Fi PCB ASSY	[E]
	927B631004	Hi-Fi PCB ASSY	[IR]
	927B631001	Hi-Fi PCB ASSY	[Y]
	928D079020	MAIN PCB ASSY	[B]
	928D079030	MAIN PCB ASSY	[E]
	928D079040	MAIN PCB ASSY	[IR]
	926D079010	MAIN PCB ASSY	[Y]
	927B633001	NICAM PCB ASSY	[B]
	927B633002	NICAM PCB ASSY	[E]
	927B633003	NICAM PCB ASSY	[IR]
	928D084020	OPE PCB ASSY	[B]
	928D084030	OPE PCB ASSY	[E]
	928D084040	OPE PCB ASSY	[IR]
	928D084010	OPE PCB ASSY	[Y]
	928D081020	POWER PCB ASSY	[B]
	928D081030	POWER PCB ASSY	[E]
	9280081040	POWER PCB ASSY	[IR]
	928D081010	POWER PCB ASSY	[Y]
	928D082020	POWER SUB PCB ASSY	[B]
	928D082030	POWER SUB PCB ASSY	[E]
	928D082040	POWER SUB PCB ASSY	[IR]
	928D082010	POWER SUB PCB ASSY	[Y]
	928D083020	TIMER PCB ASSY	[B]
	928D083030	TIMER PCB ASSY	[E]
	928D083040	TIMER PCB ASSY	[IR]
	928D083010	TIMER PCB ASSY	[Y]
	928C792002	TUNER PCB ASSY	[B]
	928C792003	TUNER PCB ASSY	[E]
	928C792004	TUNER PCB ASSY	[IR]
	928C792001	TUNER PCB ASSY	[Y]

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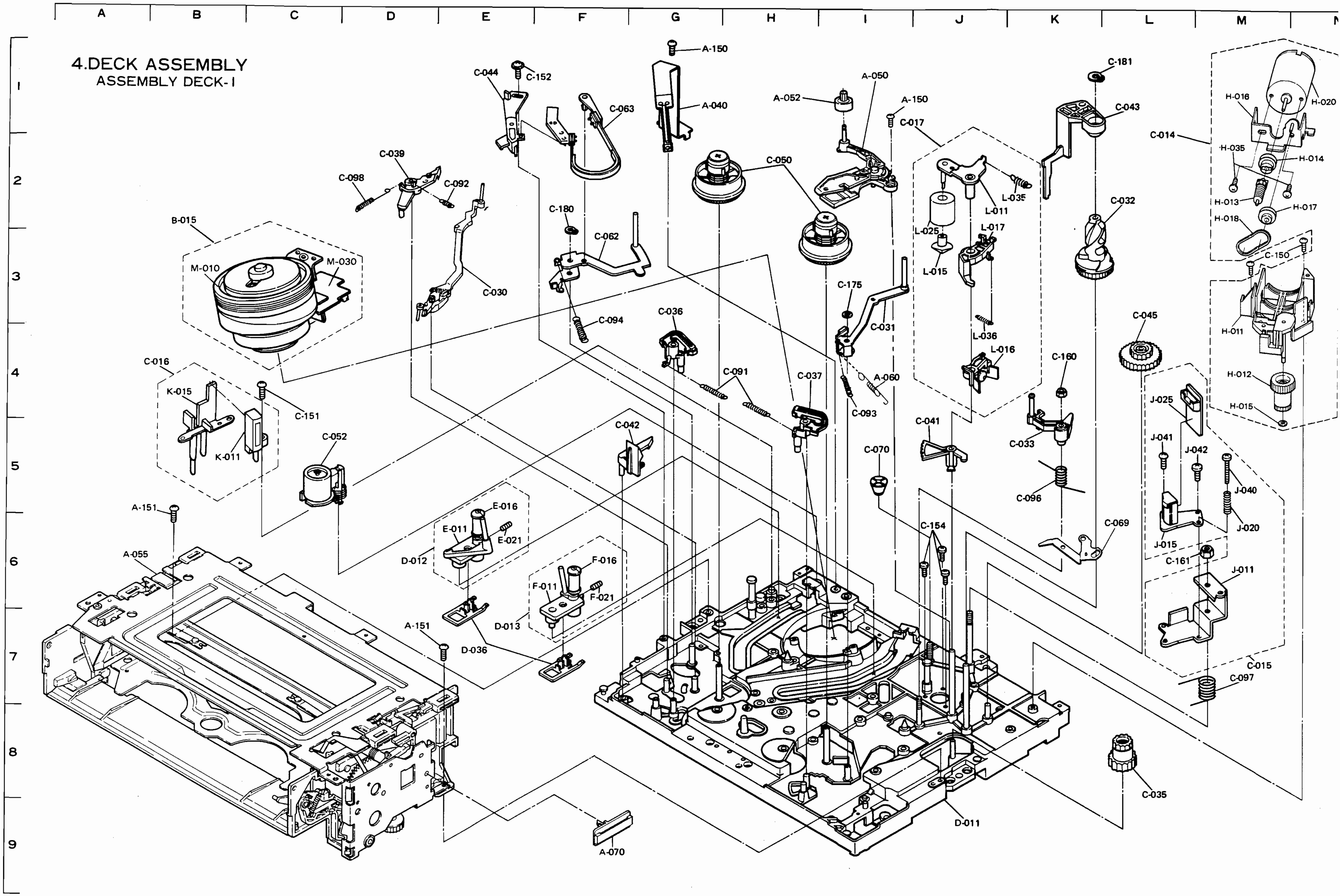
4.DECK ASSEMBLY

ASSEMBLY DECK-1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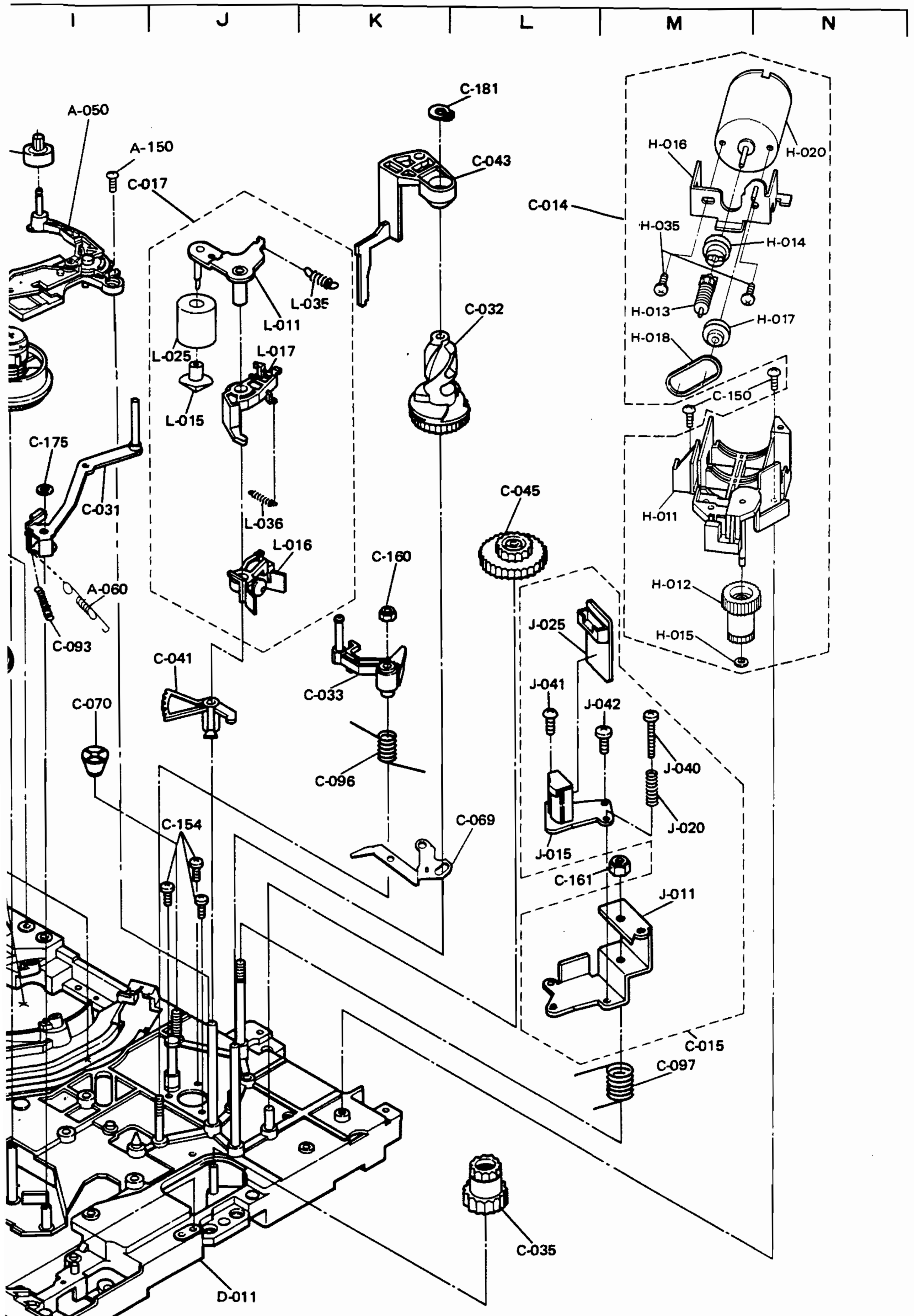


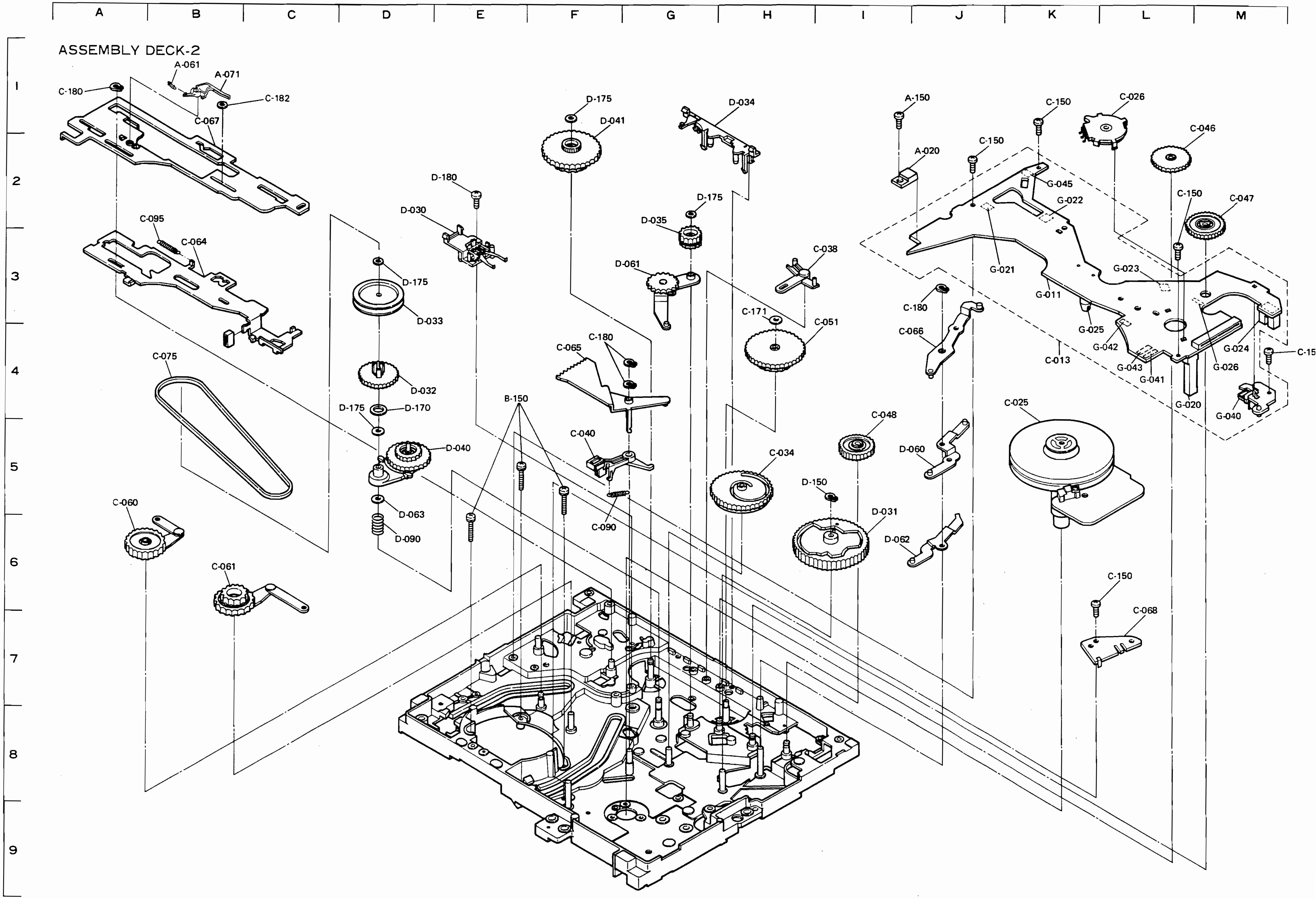
* Settelled Service Parts

ITEM	PARTS No.	*	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
B-015	948B277003	○	B-2		ASSY-DRUM		01
M-010	928B999020	○	B-3		ASSY-UPPER-DRUM		01
M-030	288P088040	○	C-3		MOTOR-DRUM	M570	01
D-011	948A071020		J-9		ASSY-MAIN-PLATE		01
D-012	948D018040	○	D-6		ASSY-TAPE-GUIDE-S		01
D-012	948D018050	○	D-6		ASSY-TAPE-GUIDE-S		01
D-012	948D018060	○	D-6		ASSY-TAPE-GUIDE-S		01
E-011	635B059010	○	E-6		TAPE-GUIDE-S		01
E-011	635B059020	○	E-6		TAPE-GUIDE-S		01
E-011	635B059030	○	E-6		TAPE-GUIDE-S		01
E-016	522D177010	○	E-5		GUIDE-ROLLER		01
E-021	669D197020		E-6		SET-SCREW-F	M3×0.5-4	01
D-013	948D019040	○	E-7		ASSY-TAPE-GUIDE-T		01
D-013	948D019050	○	E-7		ASSY-TAPE-GUIDE-T		01
D-013	948D019060	○	E-7		ASSY-TAPE-GUIDE-T		01
F-011	635B060010	○	F-6		TAPE-GUIDE-T		01
F-011	635B060020	○	F-6		TAPE-GUIDE-T		01
F-011	635B060030	○	F-6		TAPE-GUIDE-T		01
F-016	522D177010	○	F-6		GUIDE-ROLLER		01
F-021	669D197020		F-6		SET-SCREW-F	M3×0.5-4	01
D-036	621D522010	○	E-7		SLIDER		02
C-014	928D031010	○	N-5		ASSY-LOAD-MOTOR		01
H-011	641B313010		O-4		HOLDER-MOTOR		01
H-012	641C783010		N-4		GEAR-WHEEL		01
H-013	641C801010		N-2		GEAR-WORM		01
H-014	621D784010		O-2		CUPLING-2		01
H-015	552C007030	○	N-4		CUT-WASHER	2.5	01
H-016	593C059010		N-1		PLATE-HOLDER-M2		01
H-017	621D793010	○	O-2		PULLEY-L		01
H-018	521D074010	○	N-2		BELT-LM		01
H-020	288D025010	○	O-1		MOTOR-LOADING	M571	01
H-035	650P300030		N-2		SCREW-F-FE-PAN	M3×0.5-3	02
C-015	928D032030	○	M-7		ASSY-AC-HEAD		01
J-011	592C760010		M-6		ARM-AC		01
J-015	460P060050	○	L-6		HEAD-AC	T370	01
J-020	570D593010		M-6		SPRING-AC		01
J-025	215C393010		L-4		PWB-AC-AF		01
J-040	650P261040		M-5		SCREW-F-FE-PAN	M2.6×0.45-14	01
J-041	669D227010	○	L-5		SCREW-TS	M2.6×6	01
J-042	669D206030		L-5		SCREW		01
C-016	928D033010		B-4		ASSY-FE-HEAD		01
K-011	460P061020	○	B-5		HEAD-FE	T371	01
K-015	641C870010		B-4		HOLDER-FE		01
C-017	948D020010	○	I-1		ASSY-ARM-PINCH		01
L-011	591B536010		J-2		ARM-PINCH		01
L-015	621D523010	○	J-3		CAP-ROLLER		01
L-016	641C797010	○	J-4		LEVER-CAM-PINCH		01
L-017	641C798010	○	J-2		LEVER-ARM-PINCH		01
L-025	522D174010	○	J-2		ROLLER-PINCH		01
L-035	572D314010	○	K-2		SPRING-PINCH		01
L-036	572D315010	○	J-4		SPRING-CAM-PINCH		01
C-030	641B368010	○	E-3		ARM-TENS-REG-S2		01
C-031	591B551020	○	I-3		ARM-TENS-REG-T		01
C-032	641B314020	○	L-2		CAM-PINCH		01
C-033	635B068010	○	K-5		ARM-TU-G		01
C-035	641C782010	○	L-8		GEAR-JOINT		01
C-036	641B527020	○	G-3		BRAKE-MAIN-S2		01
C-037	641B526020	○	H-4		BRAKE-MAIN-T2		01

* Settelled Service Parts

ITEM	PARTS No.	*	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
C-039	641C796010	○	D-2		LEVER-TENS		01
C-041	641C991010	○	J-4		ARM-GEAR-TU-G2		01
C-042	641C804010	○	F-5		LEVER-REC-SAFETY		01
C-043	641C806010	○	L-1		CAP-ARM-PINCH		01
C-044	641C861010		E-1		HOLDER-T-BAND		01
C-045	621D509010	○	L-3		GEAR-1		01
C-050	522C076020	○	H-2		UNIT-REEL-DISK		02
C-052	641B319010	○	C-5		UNIT-IMP-ROLLER		01
C-062	591B547010	○	F-3		ARM-TENSION		01
C-063	591B552010	○	F-1		BELT-TENS-BRAKE		01
C-069	592C930010		L-6		LEVER-TENS-TU		01
C-070	635D063010		I-5		NUT-TAPER		01
C-091	572D309010	○	H-4		SPRING-M-B		02
C-092	572D391010	○	E-2		SPRING-TENS-REG-S2		01
C-093	572D390010	○	I-4		SPRING-TENS-REG-T2		01
C-094	572D312010	○	F-3		SPRING-TENS		01
C-096	572D317010	○	K-5		SPRING-TU-G		01
C-097	572D318010	○	M-7		SPRING-ARM-A/C		01
C-098	572D328010	○	D-2		SPRING-REC-SAFETY		01
C-150	669D227010	○	M-3		SCREW-TS	M2.6×6	02
C-151	669D227030	○	C-4		SCREW-TS	M2.6×10	01
C-152	669D228010		E-1		SCREW-TS-SEMS	M2.6×6	01
C-154	669D285040		J-6		SCREW-TB-PAN	M2.6×8	03
C-160	674D081020	○	K-4		NUT-NYLON	M3×0.5	01
C-161	674D100010	○	L-6		NUT-NYLON-S	M4×0.7	01
C-175	552C007030	○	I-3		CUT-WASHER	2.5	01
C-180	685C009010	○	F-2		GRIP-RING		01
C-181	685C009020	○	L-1		GRIP-RING		01
A-040	299C025010	○	G-1		BRUSH		01
A-050	641B439010	○	I-1		UNIT-IMP-T2		01
A-052	621C033010	○	H-1		UNIT-CLE-ROLLER		01
A-055	590A256020	○	A-6		UNIT-F/L-F		01
A-060	572D401010	○	I-4		SPRING-RS		01
A-070	641C906010	○	F-9		HOLDER-CARD		01
A-150	669D227010	○	G-1	I-1	SCREW-TS	M2.6×6	02
A-151	669D227020	○	A-5	D-7	SCREW-TS	M2.6×8	02

ASSEMBLY DECK-2



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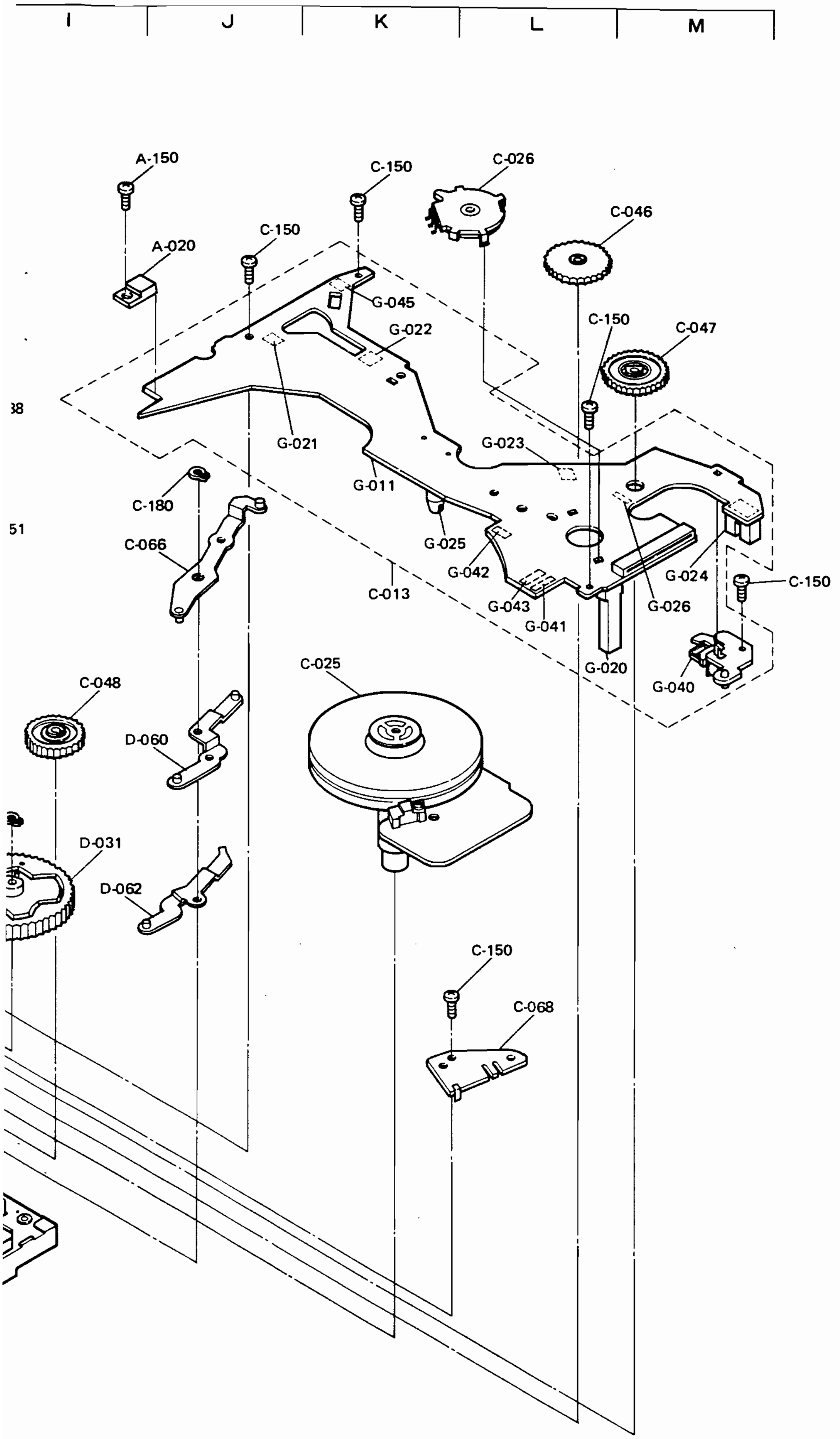
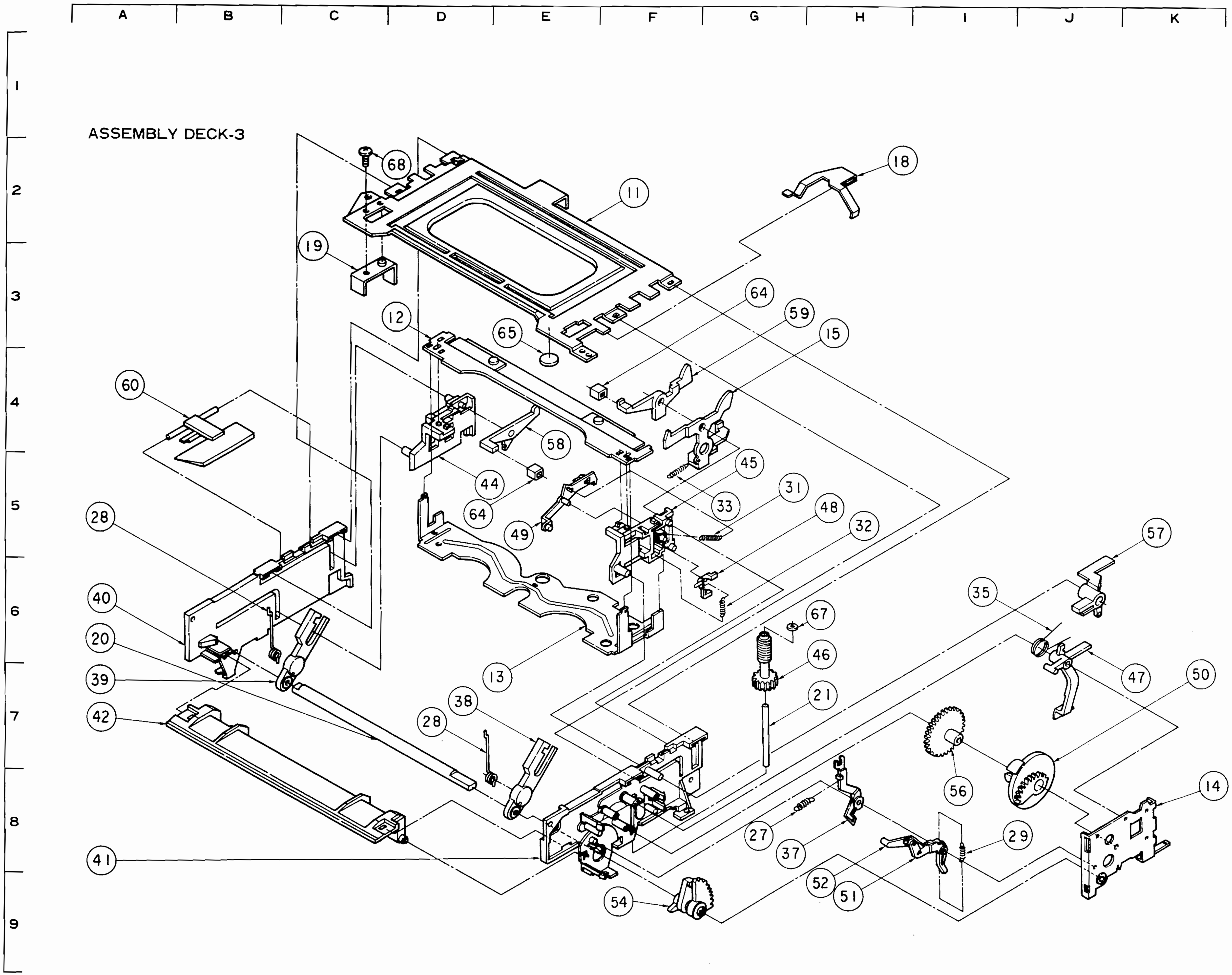


* Settelled Service Parts

ITEM	PARTS No.	*	ADDRESS		PARTS NAME	DESCRIPTION	Qt.
B-150	669D200040		E-4		SCREW-SEMS	M2.6×0.45-10	03
D-030	641B310010	○	E-2		UNIT-LEVER-SHIFT		01
D-031	641B323010	○	I-5		CAM-MAIN-1		01
D-032	641C789020	○	D-4		PULLEY-GEAR		01
D-033	641C790010	○	D-3		PULLEY-BELT		01
D-034	641C815010		H-1		HOLDER-P-CAM		01
D-035	621D516010	○	G-2		GEAR-F/L-1		01
D-040	522C077020	○	E-5		UNIT-GEAR-IDLER		01
D-041	522C083010	○	F-1		UNIT-GEAR-REEL-S		01
D-060	591B559010		I-5		LEVER-C		01
D-061	591B567010	○	G-3		LEVER-F/L-ID		01
D-062	592C830010		I-6		LEVER-RS		01
D-063	596D057010	○	D-5		WASHER-R	T=0.3	01
D-090	572D306010	○	D-6		SPRING-SHIFT		01
D-150	685C009010	○	H-5		GRIP-RING		01
D-170	552C010040	○	D-4		WASHER-THRUST	6.7×12×0.13	01
D-175	552C007030	○	D-3 G-2	D-4 F-1	CUT-WASHER	2.5	04
D-180	669D227010	○	E-2		SCREW-TS	M2.6×6	01
C-013	928C595001	○	K-4		ASSY-PWB-DECK		01
G-011	240A750010		K-3		PWB-DECK		01
G-020	268P014020	○	L-4		TRANSISTOR	Q571 PN205L-(NC)	01
G-021	268P014020	○	J-3		TRANSISTOR	Q572 PN205L-(NC)	01
G-022	268P044010	○	K-2		PHOTO-INTERRUPTER	Q573 ON2270-R	01
G-023	268P044010	○	L-3		PHOTO-INTERRUPTER	Q574 ON2270-R	01
G-024	268P045010	○	M-4		PHOTO-INTERRUPTER	Q575 GP1L52	01
G-025	264P307020	○	K-4		DIODE-LE	D570 GL-451	01
G-026	264P515010	○	M-4		DIODE	D571 MA165	01
G-040	299P124010	○	M-4		LATCH-MAGNET	L570	01
G-041	260P455010	○	L-4		TRANSISTOR	Q581 DTC124EF	01
G-042	260P455010	○	L-4		TRANSISTOR	Q582 DTC124EF	01
G-043	260P455010	○	L-4		TRANSISTOR	Q583 DTC124EF	01
G-045	439P020010	○	K-2		SW-LIMIT	SW571	01
C-025	288P118010	○	K-4		MOTOR-CP	M470	01
C-026	439P019020	○	L-1		SW-MODE-SELECT-F	SW570	01
C-034	641B324010	○	H-5		CAM-MAIN-2		01
C-038	641C795010	○	I-3		LEVER-IDLER-S		01
C-040	641C800010	○	F-5		BRAKE-CP		01
C-046	621D517010	○	M-1		GEAR-F/L-2		01
C-047	621D518010	○	M-2		GEAR-F/L-3		01
C-048	621D519010	○	I-4		GEAR-F/L-4		01
C-051	522C078040	○	I-3		UNIT-GEAR-REEL		01
C-060	591B543010	○	A-5		ARM-LOAD-S		01
C-061	591B544010	○	B-6		ARM-LOAD-T		01
C-064	591B554010		B-3		PLATE-CAM-C		01
C-065	591B557010	○	F-4		ARM-GEAR-LOAD		01
C-066	591B558010		J-4		LEVER-B		01
C-067	592C949010		B-1		UNIT-PLATE-CAM-B3		01
C-068	596D186010		L-6		PLATE-SHIELD-F		01
C-075	521D062010	○	B-4		BELT-REEL		01
C-090	572D308020	○	F-6		SPRING-B-CP		01
C-095	572D313010	○	B-2		SPRING-CAM-C		01
C-150	669D227010	○	J-2 L-2 M-4	K-1 L-6	SCREW-TS	M2.6×6	05
C-171	552C006020	○	H-3		WASHER-THRUST	2.0×0.13	01
C-180	685C009010	○	A-1 J-3	F-4	GRIP-RING		04
C-182	552C009050	○	C-1		CUT-WASHER		01
A-020	260P630010	○	J-2		TRANSISTOR	Q971 2SD2012	01
A-061	572D404010	○	B-1		SPRING-B-RS		01
A-071	641C928010	○	B-1		LEVER-B-RS		01
A-150	669D227010	○	I-1		SCREW-TS	M2.6×6	01

ASSEMBLY DECK-3


A
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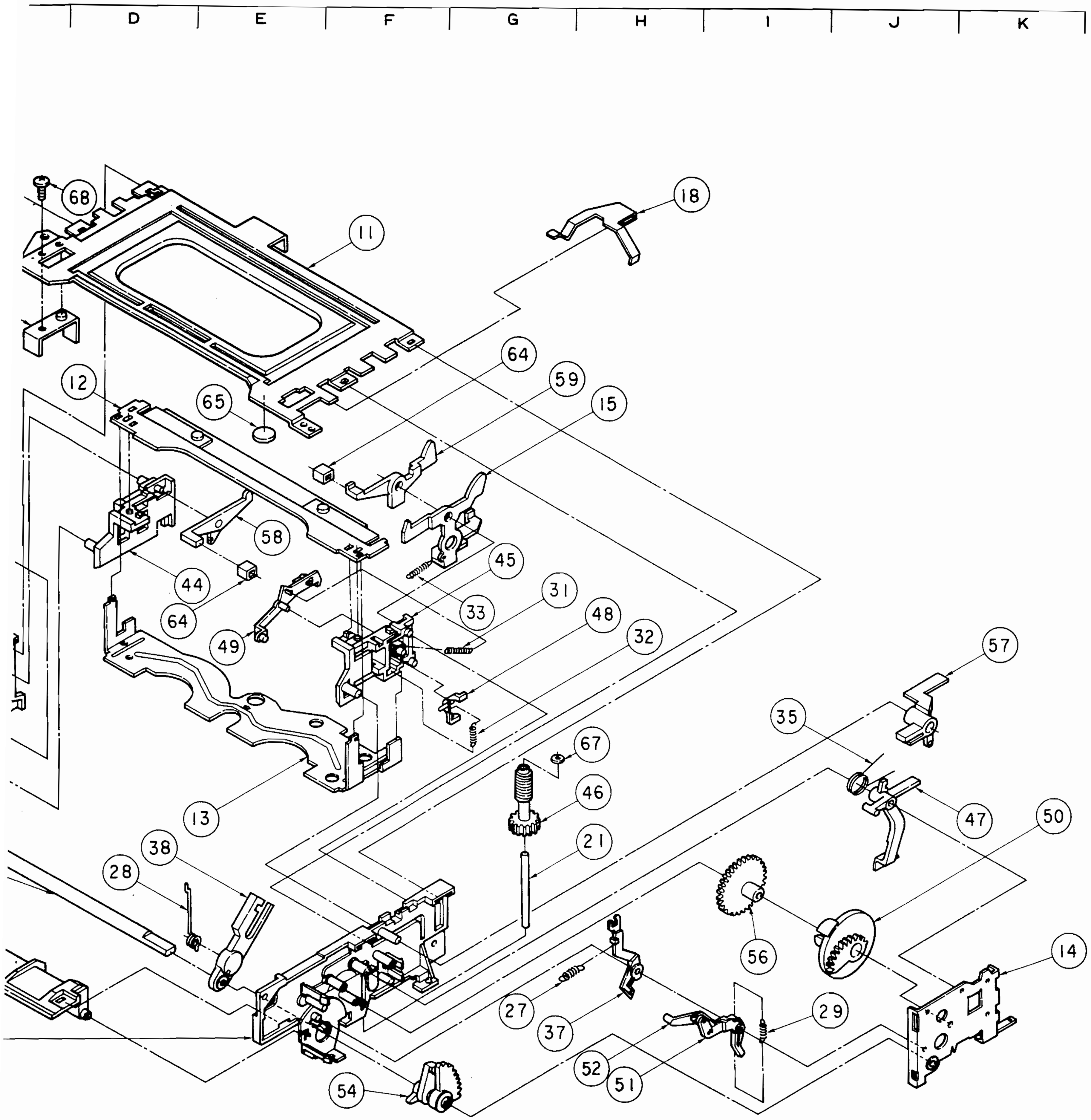
* Settelled Servic

ITEM	PARTS No.
11	591B545010
12	592C758010
13	591B546010
14	591B542010
15	592C851010
18	596D150010
19	596D217010
20	631D134010
21	631D135010
27	(not used)
28	572D301010
29	572D389010
31	572D304010
32	572D305010
33	572D380010
35	572D367010
37	(not used)
38	641B315010
39	641B315020
40	641A110010
41	641A109010
42	641B306010
44	641B309010
45	641B307010
46	621D513010
47	621D514010
48	621D515010
49	641C794010
50	641C793010
51	641C897010
52	641C898010
54	641C858010
56	641C814010
57	641C857010
58	621D585010
59	621D586010
60	641C878010
64	642D494010
65	(not used)
67	552C001040
68	--------



* Settelled Service Parts

ITEM	PARTS No.	*	ADDRESS		PARTS NAME	DESCRIPTION	Q:.
11	591B545010		F-2		PLATE-ROOF		01
12	592C758010		D-3		PLATE-UPPER		01
13	591B546010		E-7		PLATE-BOTTOM		01
14	591B542010		K-8		PLATE-SIDE-TU		01
15	592C851010		H-3		LEVER-LOCK-FL		01
18	596D150010		H-2		PLATE-EARTH		01
19	596D217010		C-3		PLATE-GUARD		01
20	631D134010		A-6		SHAFT-FL		01
21	631D135010		H-7		SHAFT-WORM		01
27	(not used)		G-8				
28	572D301010	○	A-5	D-7	SPRING-FL		02
29	572D389010		J-8		SPRING-DOOR-SUB		01
31	572D304010		G-5		SPRING-OPENER-LID		01
32	572D305010		H-5		SPRING-JUT-FL		01
33	572D380010		G-5		SPRING-LEVER-LOCK		01
35	572D367010		I-6		SPRING-LEVER-SW		01
37	(not used)		G-8				
38	641B315010	○	D-7		ARM-FL		01
39	641B315020	○	A-7		ARM-FL		01
40	641A110010		A-6		HOLDER-SIDE-SP		01
41	641A109010		A-8		HOLDER-SIDE-TU		01
42	641B306010		A-7		GUIDE-INSERT		01
44	641B309010		D-5		HOUSING-CASSETTE-SP		01
45	641B307010		G-5		HOUSING-CASSETTE-TU		01
46	621D513010	○	H-6		GEAR-WORM-FL		01
47	621D514010		K-7		LEVER-SW-FL		01
48	621D515010	○	H-5		JUT		01
49	641C794010		E-5		OPENER-LID-CAS		01
50	641C793010	○	K-7		GEAR-DRIVE		01
51	641C897010	○	H-9		ARM-FL-DOOR-A		01
52	641C898010	○	H-9		ARM-FL-DOOR-B		01
54	641C858010	○	F-9		ARM-LOCK		01
56	641C814010	○	I-8		GEAR-W-H-F/L		01
57	641C857010		K-5		LEVER-PICK-CAS		01
58	621D585010		E-4		LEVER-CAS-SP		01
59	621D586010		G-3		LEVER-CAS-TU		01
60	641C878010		A-4		STOPPER-SP-FL		01
64	642D494010		D-5	G-3	RUBBER-FL		02
65	(not used)		E-3				
67	552C001040	○	H-6		WASHER-THRUST	3 T0.25	01
68	--------		D-2		SCREW	2.6-5	01

SCHEMATIC DIAGRAM

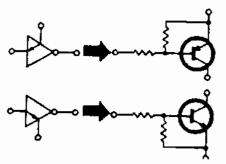
NOTE 1:

1. DC voltages were measured from points indicated to the circuit ground with a digital voltmeter.
2. The voltages parenthesised are on SP recording mode. While those without parenthesised are on SP play back mode.

NOTE 2:

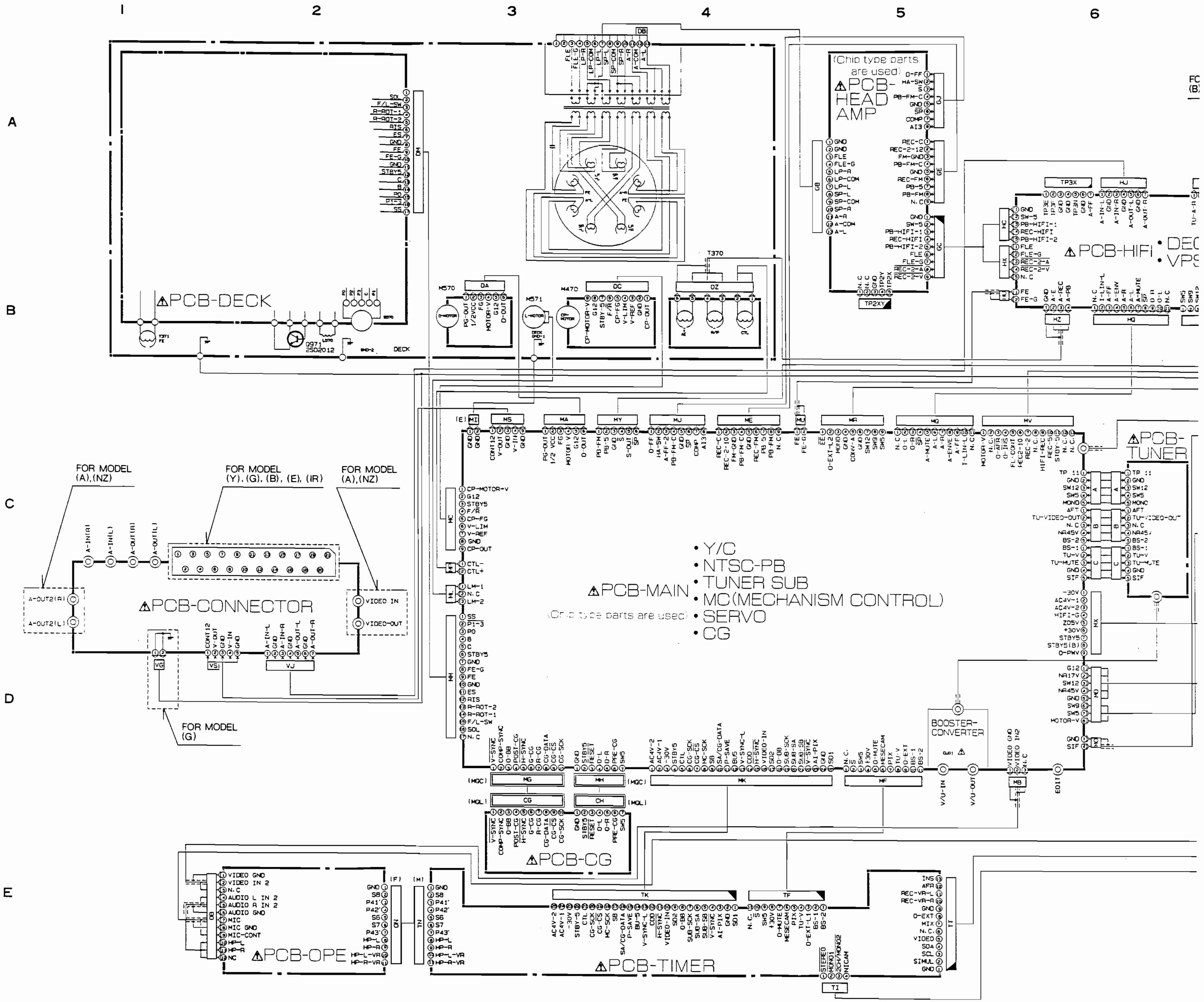
1. The unit of resistance "ohm" entirely omitted.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistor, not specifically designated, is 1/4 watt except CHIP resistors.
3. Resistors, not specifically designated, are carbon resistors except CHIP resistors.
4. The marks of resistors are as follows.
   - CE : Cemented resistor
   - MB : Metal oxide film resistor (type B)
   - Ⓢ : Fixed composition resistors
   - Ⓦ : Wire wound resistor
   - Ⓜ : Metal film resistor
5. The tolerance of resistor value, not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, not specifically designated, is:
   a) µF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - ALM : Aluminus electrolytic capacitor
   - MF : Polyester capacitor
   - PP : Polypropylene film capacitor
   - TAN : Tantalum capacitor
   - SC : Semiconductor Ceramic Capacitors
   - TF : Twin film capacitor
   - NP : Non polarized electrolytic capacitor
   - ⫩ : Electrolytic capacitor
9. The DC working voltage of capacitor, not specifically designated is: 50V
10. The tolerance of capacitor value, not specifically designated is: ±10%
    and J = ±5% K = ±10% M = ±20% $P = {}^{+100\%}_{-\ 0\%}$
    C = ±0.25PF D = ±0.5PF F = ±1PF $Z = {}^{+80\%}_{-20\%}$ N=±30%
11. Ceramic capacitors with the marks RH, UJ, SL, etc. are temperature compensating types.

SPECIFIC SYMBOL	
Zener Diode	Crystal unit
Varicap	LE Diode
Posistor	Photo Diode
Thermistor	Ceramic filter
Fusible Resistor	

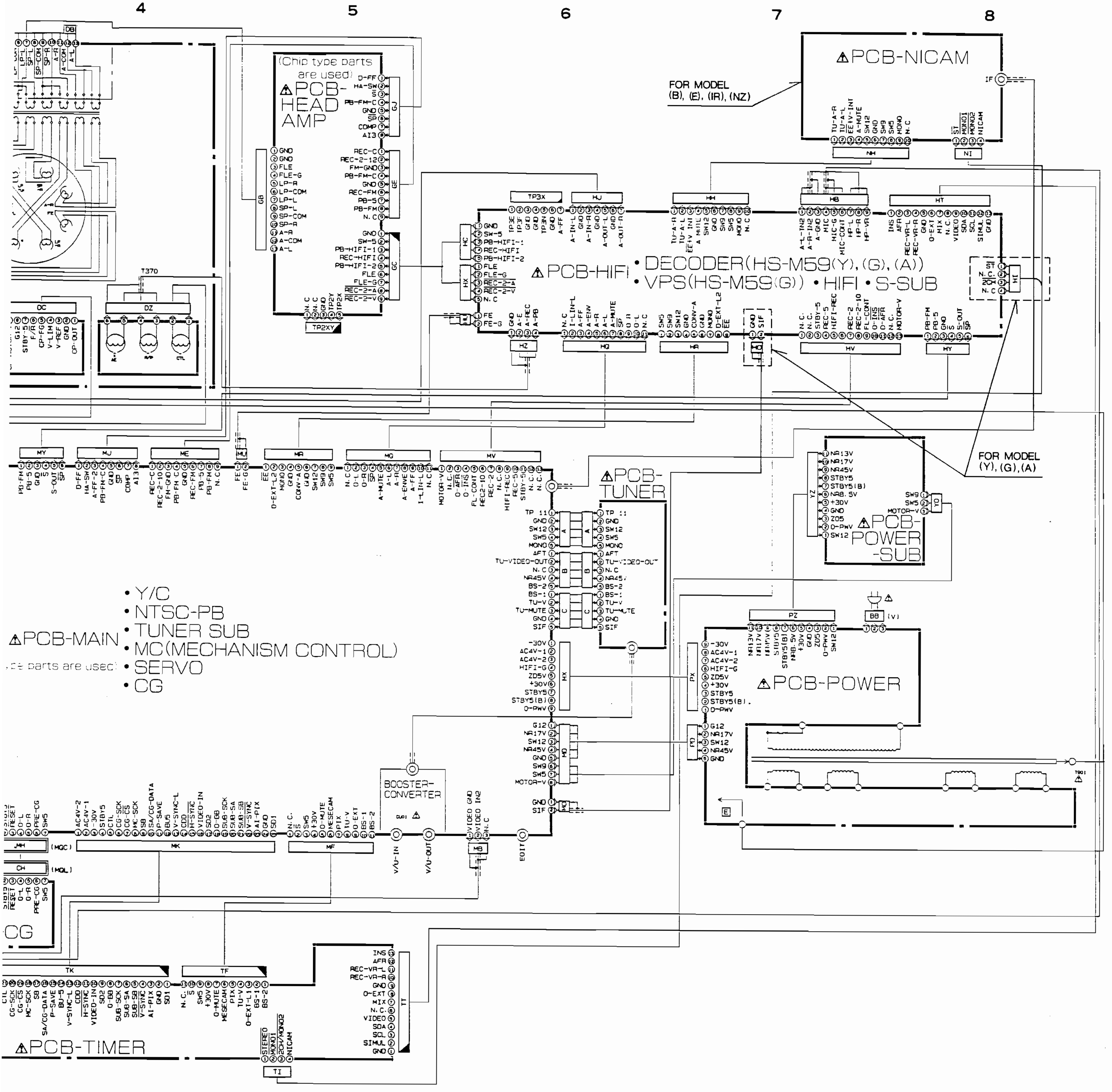


PNP DIGITAL TRANSISTOR
NPN DIGITAL TRANSISTOR

This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.



1
2
3
4
5
6
A
B
C
D
E
⚠PCB-DECK
DECK
Q971 2SD2012
T371 FE
SOL
F/L-SW
R-ROT-1
R-ROT-2
RIS
ES
GND
FE
FE-G
GND
STBY5
SS
DM
DB
FLE
FLE-G
LP-R
LP-COM
LP-L
SP-L
SP-COM
SP-R
A-COM
A-L
M570
DA
D-MOTOR
PG-OUT
1/2VCC FG
MOTOR-V
G12
D-OUT
M571
L-MOTOR
M470
DC
CP-MOTOR
CP-MOTOR-V
G12
STBY-5
F/R
CP-FG
V-LIM
V-REF
GND
CP-OUT
T370
DZ
(Chip type parts are used)
⚠PCB-HEAD AMP
D-FF
HA-SW
S
PB-FM-C
GND
SP
COMP
AI3
GJ
GB
REC-C
REC-2-12
FM-GND
PB-FM-C
GND
REC-FM
PB-5
PB-FM
N.C
GE
GND
SW-5
PB-HIFI-1
REC-HIFI
PB-HIFI-2
FLE
FLE-G
REC-2-A
REC-2-V
GC
TP2XY
TP3X
HJ
HC
HX
HZ
HQ
⚠PCB-HIFI
DEC
VPS
MI
MS
MA
MY
MJ
ME
MF
MR
MQ
MV
MC
MT
ML
MH
⚠PCB-MAIN
(Chip type parts are used)
• Y/C
• NTSC-PB
• TUNER SUB
• MC(MECHANISM CONTROL)
• SERVO
• CG
⚠PCB-TUNER
BOOSTER-CONVERTER
V/U-IN
V/U-OUT
EDIT
MB
FOR MODEL (A),(NZ)
FOR MODEL (Y),(G),(B),(E),(IR)
FOR MODEL (A),(NZ)
FOR MODEL (G)
A-IN(R)
A-IN(L)
A-OUT(R)
A-OUT(L)
A-OUT2(R)
A-OUT2(L)
VIDEO IN
VIDEO-OUT
⚠PCB-CONNECTOR
VG
VSI
VJ
(MQC)
(MQL)
MG
MH
MK
CG
CH
⚠PCB-CG
⚠PCB-OPE
VIDEO GND
VIDEO IN 2
N.C
AUDIO L IN 2
AUDIO R IN 2
AUDIO GND
MIC
MIC GND
MIC-CONT
HP-L
HP-R
NC
OB
ON
(F)
(M)
IN
TK
TF
TT
TI
⚠PCB-TIMER
STEREO
MONO1
2CH/MONO2
NICAM
INS
AFR
REC-VR-L
REC-VR-R
GND
O-EXT
MIX
N.C.
VIDEO
SDA
SCL
SIMUL
GND


4
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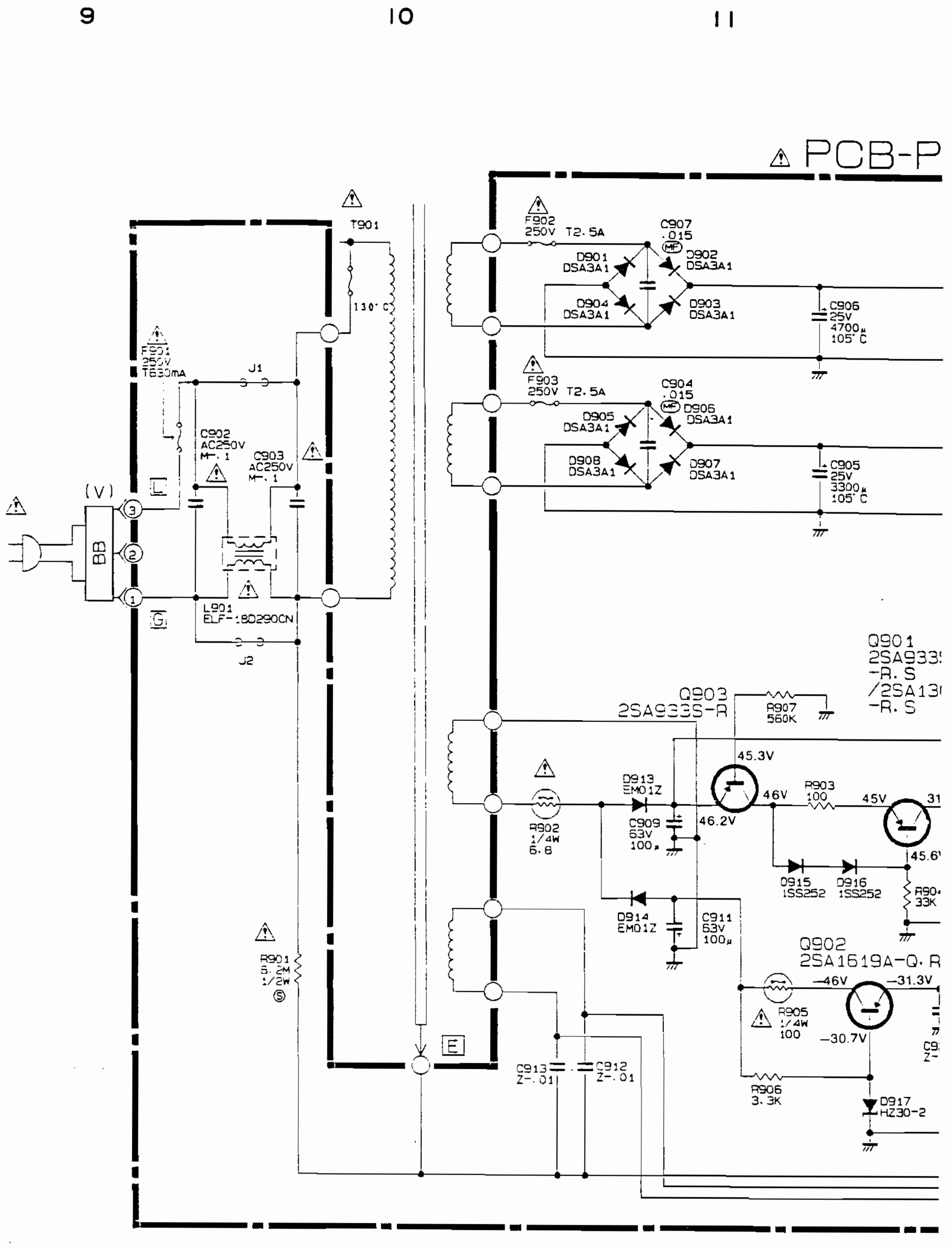
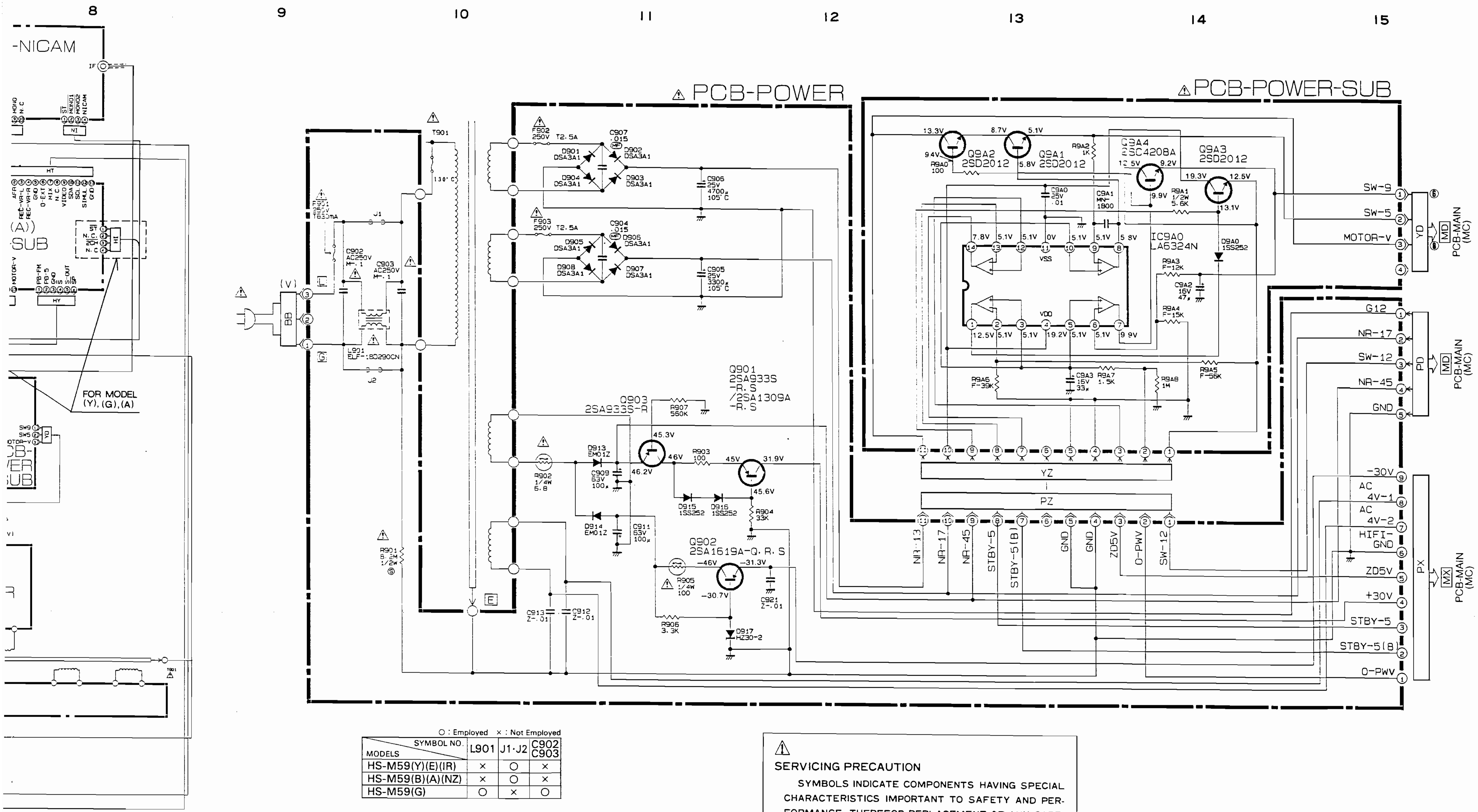
8
(Chip type parts are used)
⚠PCB-HEAD AMP
⚠PCB-NICAM
FOR MODEL (B), (E), (IR), (NZ)
⚠PCB-HIFI
• DECODER(HS-M59(Y), (G), (A))
• VPS(HS-M59(G)) • HIFI • S-SUB
FOR MODEL (Y), (G), (A)
⚠PCB-TUNER
⚠PCB-POWER-SUB
⚠PCB-POWER
⚠PCB-MAIN
• Y/C
• NTSC-PB
• TUNER SUB
• MC(MECHANISM CONTROL)
• SERVO
• CG
BOOSTER-CONVERTER
⚠PCB-TIMER
CG
T370
T901


9
10
11
⚠PCB-P
T901
F902 250V T2.5A
F903 250V T2.5A
D901 DSA3A1
D902 DSA3A1
D903 DSA3A1
D904 DSA3A1
D905 DSA3A1
D906 DSA3A1
D907 DSA3A1
D908 DSA3A1
C907 .015
C904 .015
C906 25V 4700μ 105°C
C905 25V 3300μ 105°C
C902 AC250V
C903 AC250V
L901 ELF-18D290CN
J1
J2
BB
(V)
(G)
Q901 2SA933S-R.S /2SA13 -R.S
Q903 2SA933S-R
R907 560K
D913 EM01Z
C909 63V 100μ
R902 1/4W 6.8
R903 100
45.3V
46V
45V
46.2V
45.6V
D915 1SS252
D916 1SS252
D914 EM01Z
C911 63V 100μ
Q902 2SA1619A-Q.R
R905 1/4W 100
-46V
-31.3V
-30.7V
R906 3.3K
D917 HZ30-2
C913 Z-.01
C912 Z-.01
R901
E

○ : Employed × : Not Employed

MODELS \ SYMBOL NO.	L901	J1·J2	C902 C903
HS-M59(Y)(E)(IR)	×	○	×
HS-M59(B)(A)(NZ)	×	○	×
HS-M59(G)	○	×	○


8
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11
12
13
14
15
-NICAM
PCB-POWER
PCB-POWER-SUB
T901
F902 250V T2.5A
F903 250V T2.5A
C907 .015
C904 .015
D901 DSA3A1
D902 DSA3A1
D903 DSA3A1
D904 DSA3A1
D905 DSA3A1
D906 DSA3A1
D907 DSA3A1
D908 DSA3A1
C905 25V 4700μ 105°C
C905 25V 3300μ 105°C
C902 AC250V
C903 AC250V
L901 ELF-18D290CN
J1
J2
BB
(V)
G
E
FOR MODEL (Y),(G),(A)
Q901 2SA933S -R,S /2SA1309A -R,S
Q903 2SA933S-R
R907 560K
D913 EM01Z
D914 EM01Z
C909 63V 100μ
C911 63V 100μ
R902 1/4W 6.8
R903 100
45.3V
46V
46.2V
45V
31.9V
45.6V
D915 1SS252
D916 1SS252
R904 33K
Q902 2SA1619A-Q,R,S
-46V
-31.3V
-30.7V
R905 1/4W 100
R906 3.3K
C921 Z-.01
D917 HZ30-2
C913 Z-.01
C912 Z-.01
R901 8.2M 1/2W
Q9A2 2SD2012
Q9A1 2SD2012
Q9A4 2SC4208A
Q9A3 2SD2012
R9A0 100
R9A2 1K
R9A1 1/2W 5.6K
13.3V
8.7V
5.1V
9.4V
5.8V
12.5V
9.2V
19.3V
9.9V
13.1V
C9A0 25V .01
C9A1 MN-1800
IC9A0 LA6324N
D9A0 1SS252
R9A3 F-12K
C9A2 16V 47μ
R9A4 F-15K
R9A5 F-56K
R9A6 F-39K
C9A3 16V 33μ
R9A7 1.5K
R9A8 1M
VSS
VDD
YZ
PZ
NR-13
NR-17
NR-45
STBY-5
STBY-5(B)
GND
ZD5V
O-PWV
SW-12
SW-9
SW-5
MOTOR-V
YD
MD
PCB-MAIN (MC)
G12
NR-17
SW-12
NR-45
GND
PD
-30V
AC 4V-1
AC 4V-2
HIFI-GND
ZD5V
+30V
STBY-5
STBY-5(B)
O-PWV
PX
MX

○ : Employed × : Not Employed

MODELS \ SYMBOL NO.	L901	J1·J2	C902 C903
HS-M59(Y)(E)(IR)	×	○	×
HS-M59(B)(A)(NZ)	×	○	×
HS-M59(G)	○	×	○

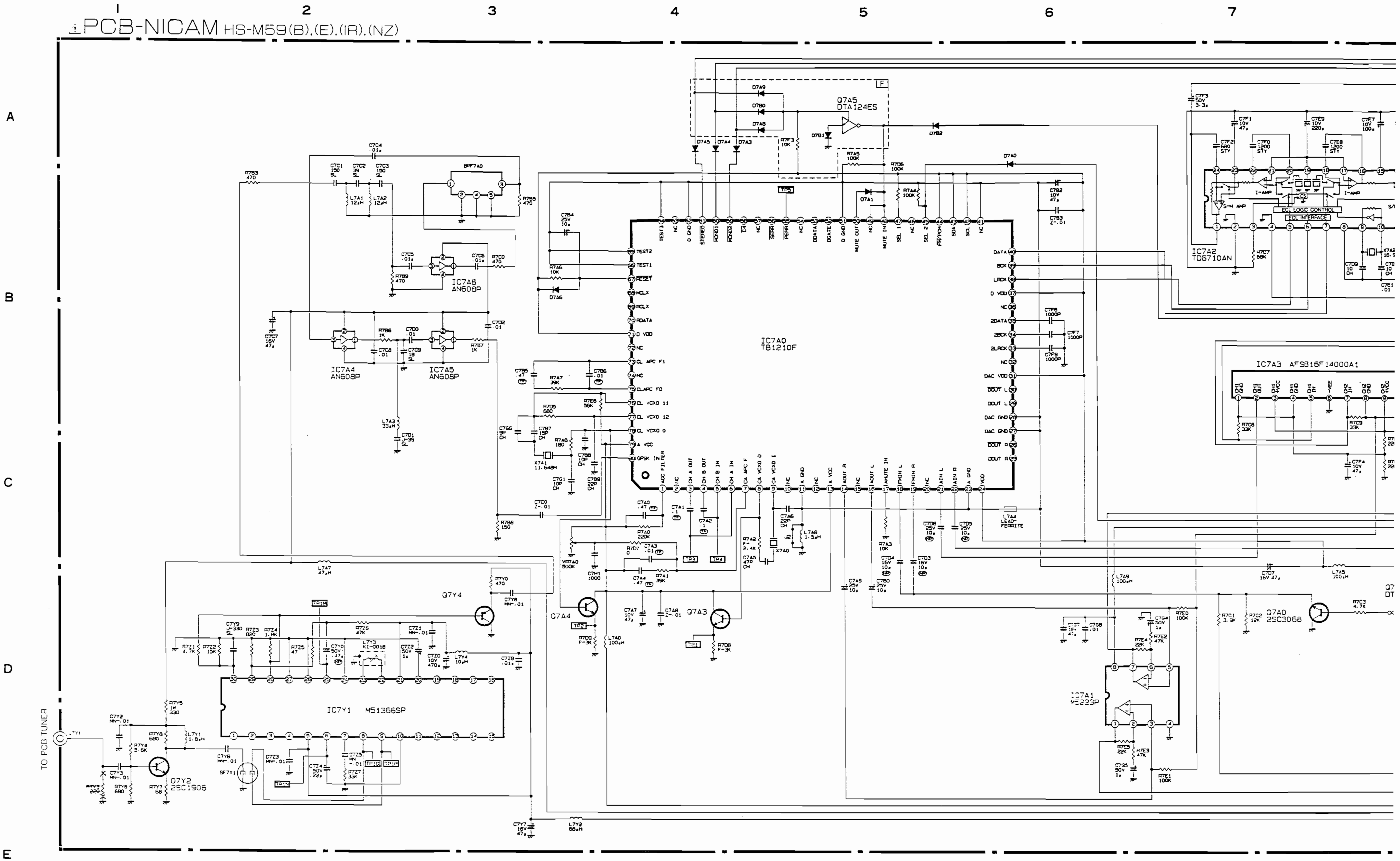
⚠

SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THEREFOR REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS.

DON'T DEGRADE THE SAFETY OF THE VCR THROUGH IMPROPER SERVICING.

PCB-NICAM HS-M59(B),(E),(IR),(NZ)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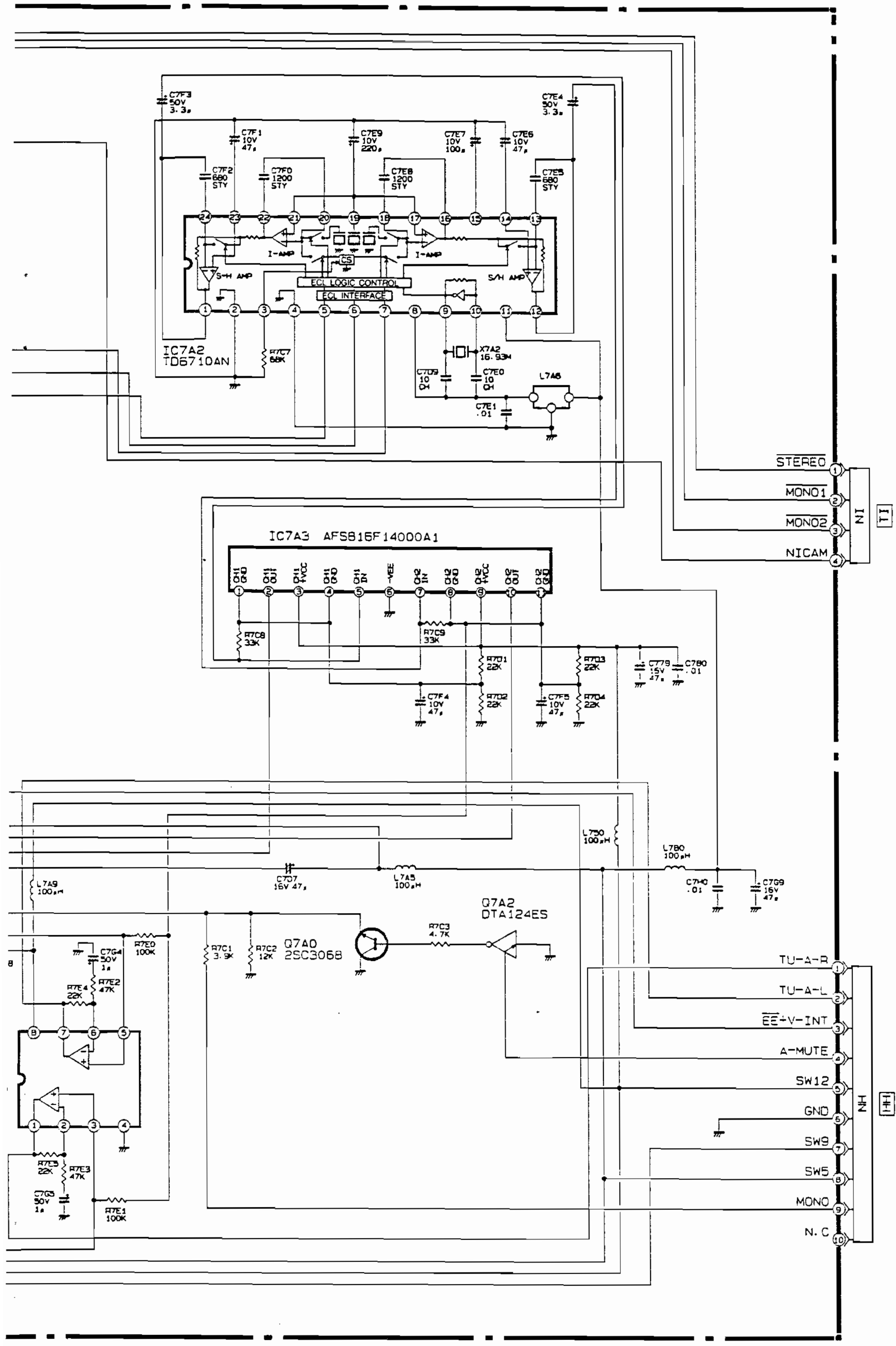
7
A
B
C
D
E
IC7A0 TB1210F
IC7A2 TD6710AN
IC7A3 AFS816F14000A1
IC7A1 M5223P
IC7Y1 M51366SP
IC7A4 AN608P
IC7A5 AN608P
IC7A6 AN608P
BPF7A0
Q7A5 DTA124ES
Q7A0 2SC3068
Q7Y2 2SC1906
Q7Y4
Q7A4
Q7A3
X7A1 11.648M
X7A0
SF7Y1
L7A4 LEAD-FERRITE
ECL LOGIC CONTROL
ECL INTERFACE
TO PCB-TUNER

All diodes are 1SS252/1N4531 unless otherwise specified
All NPN transistors are 2SC2058S-N,P unless otherwise specified
All PNP transistors are 2SA933S-R,S/2SA1309A-R,S/JC101-P,Q unless otherwise specified

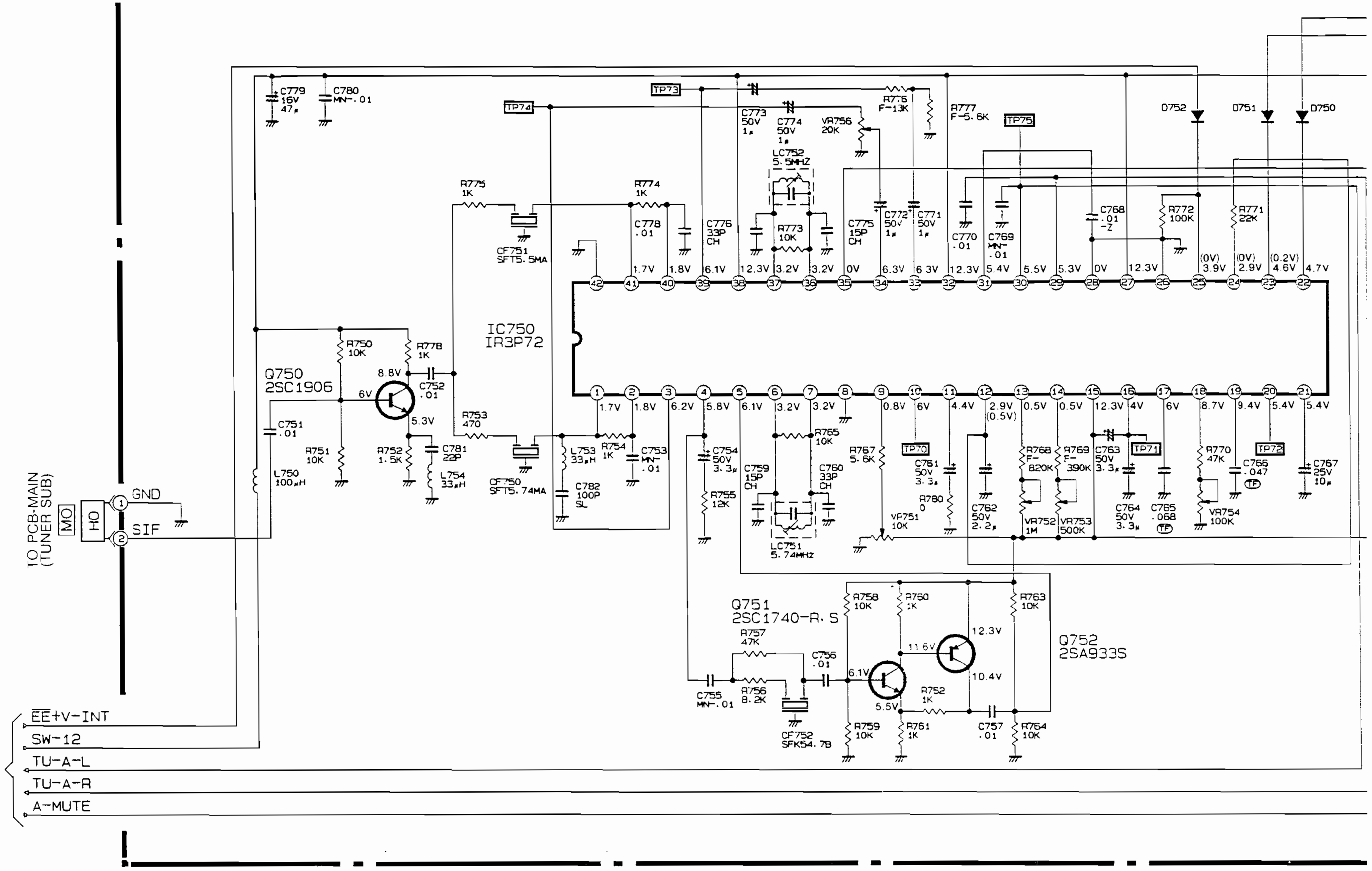
○ : Employed × : Not Employed

SYMBOL NO. MODELS	F AREA	J2	BPF7A0	L7A8	SF7Y1	X7A0
HS-M59(B)	×	○	2110	×	SAF32.9M	6.552MHz
HS-M59(E)	○	×	2918	○	SAF33.0M	5.85 MHz
HS-M59(IR)	×	○	2110	×	SAF32.9M	6.552MHz
HS-M59(NZ)	×	×	2918	○	SAF33.0M	5.85 MHz

HS-M59(Y),(A),(G) (DECOD



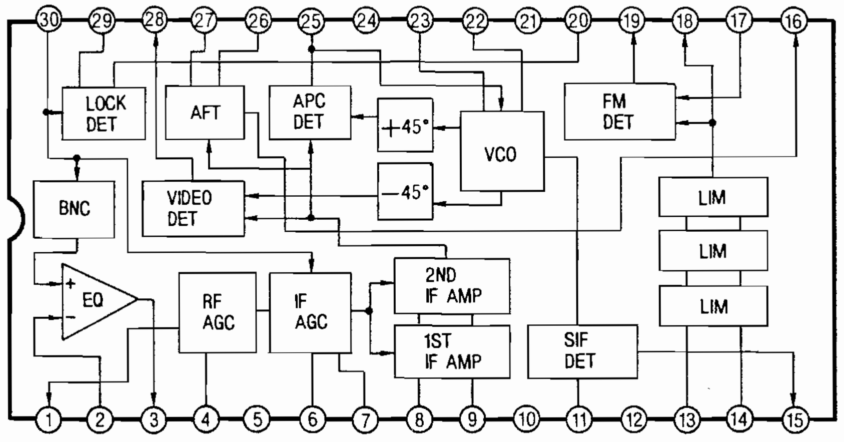
IC7A2 TD6710AN
S/H AMP
I-AMP
ECL LOGIC CONTROL
ECL INTERFACE
X7A2 16.93M
L7A6
IC7A3 AFS816F14000A1
STEREO
MONO1
MONO2
NICAM
TO PCB-TIMER
Q7A2 DTA124ES
Q7A0 2SC3068
TU-A-R
TU-A-L
EE+V-INT
A-MUTE
SW12
GND
SW9
SW5
MONO
N.C
TO PCB-HIFI



TO PCB-MAIN (TUNER SUB)
GND
SIF
Q750 2SC1906
IC750 IR3P72
CF751 SFT5.5MA
CF750 SFT5.74MA
LC752 5.5MHZ
LC751 5.74MHZ
Q751 2SC1740-R,S
Q752 2SA933S
CF752 SFK54.78
TP70
TP71
TP72
TP73
TP74
TP75
D750
D751
D752
EE+V-INT
SW-12
TU-A-L
TU-A-R
A-MUTE
TO HIFI

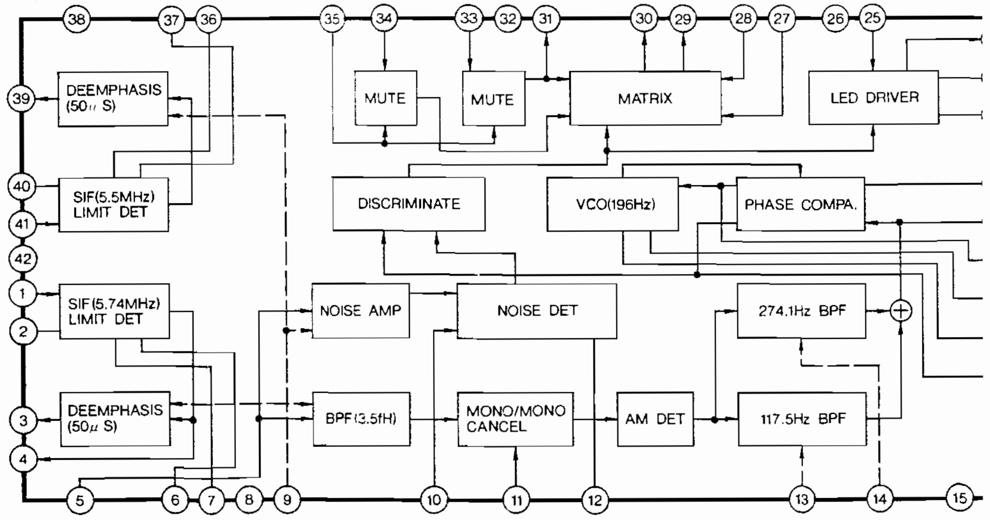
All diodes are 1SS252 unless otherwise specified

IC7Y1 M51366SP



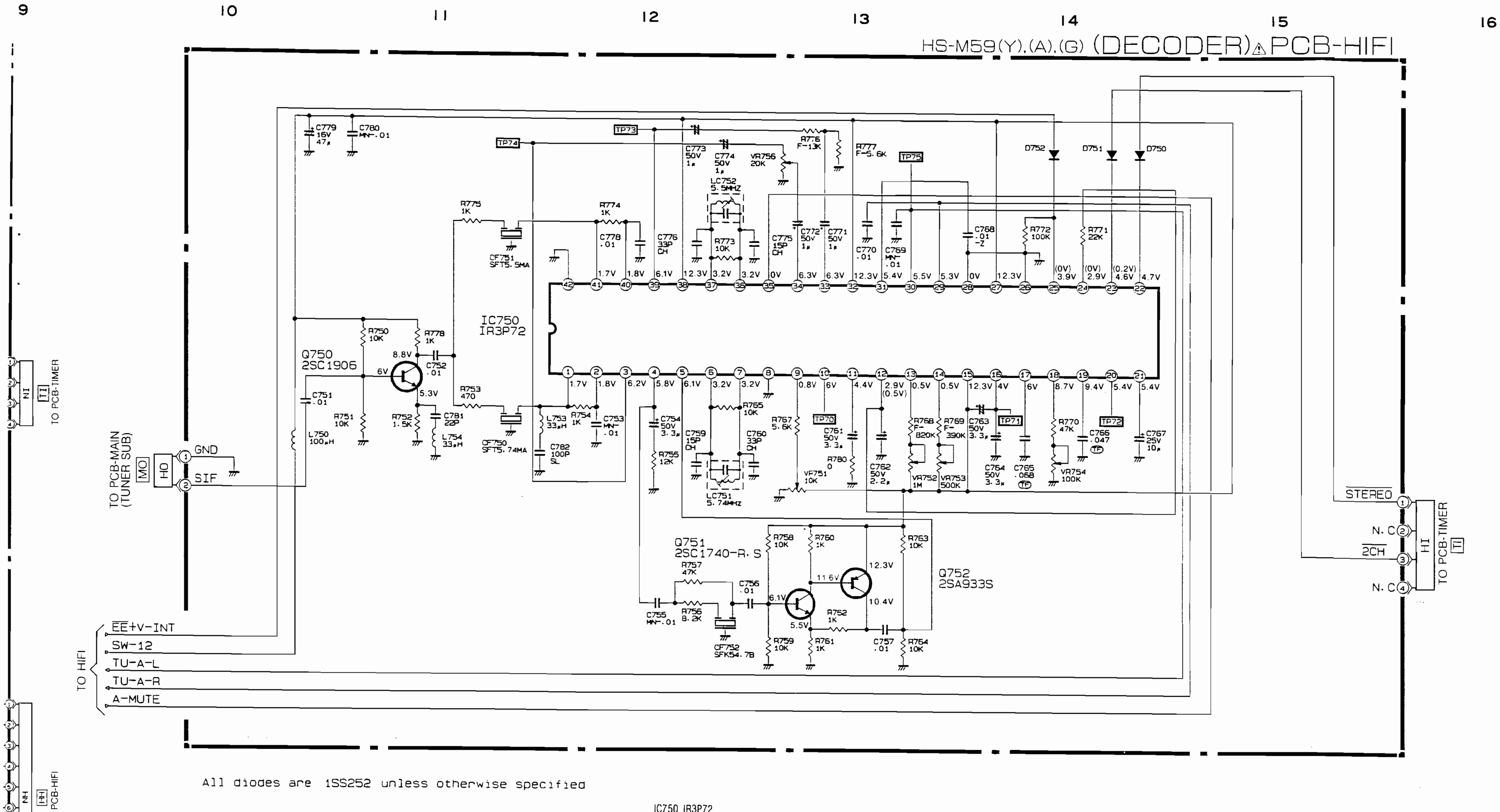
LOCK DET
AFT
APC DET
+45°
-45°
VCO
FM DET
BNC
VIDEO DET
LIM
LIM
LIM
EQ
RF AGC
IF AGC
2ND IF AMP
1ST IF AMP
SIF DET

IC750 IR3P72

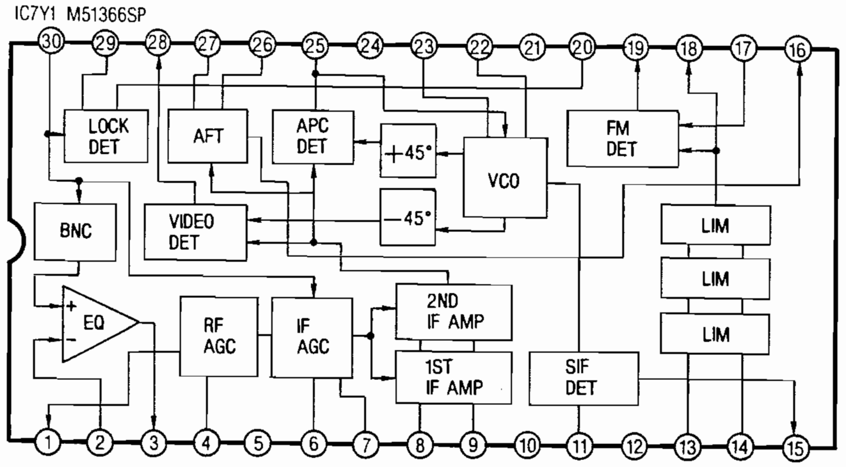


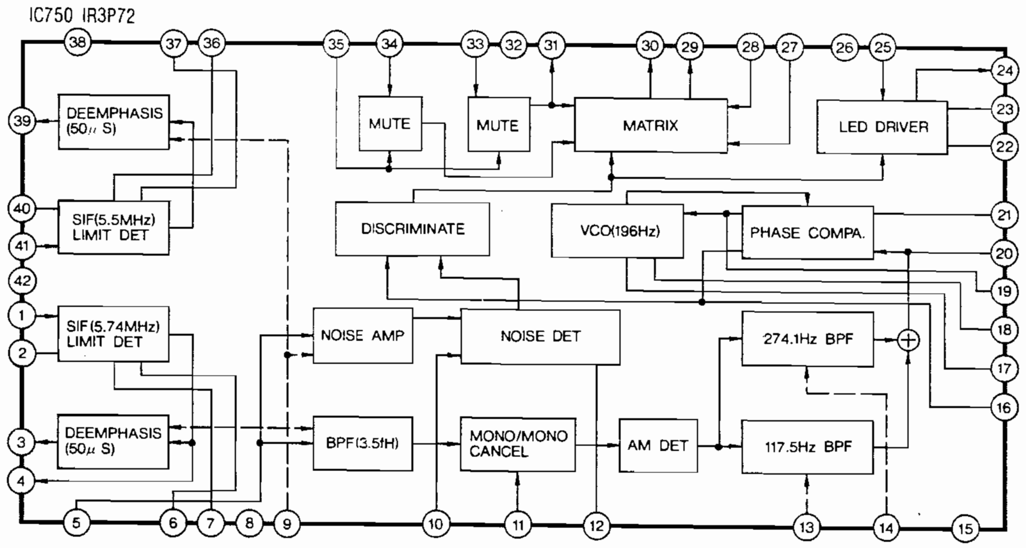
DEEMPHASIS (50μ S)
SIF(5.5MHz) LIMIT DET
SIF(5.74MHz) LIMIT DET
DEEMPHASIS (50μ S)
MUTE
MUTE
MATRIX
LED DRIVER
DISCRIMINATE
VCO(196Hz)
PHASE COMPA.
NOISE AMP
NOISE DET
274.1Hz BPF
BPF(3.5fH)
MONO/MONO CANCEL
AM DET
117.5Hz BPF

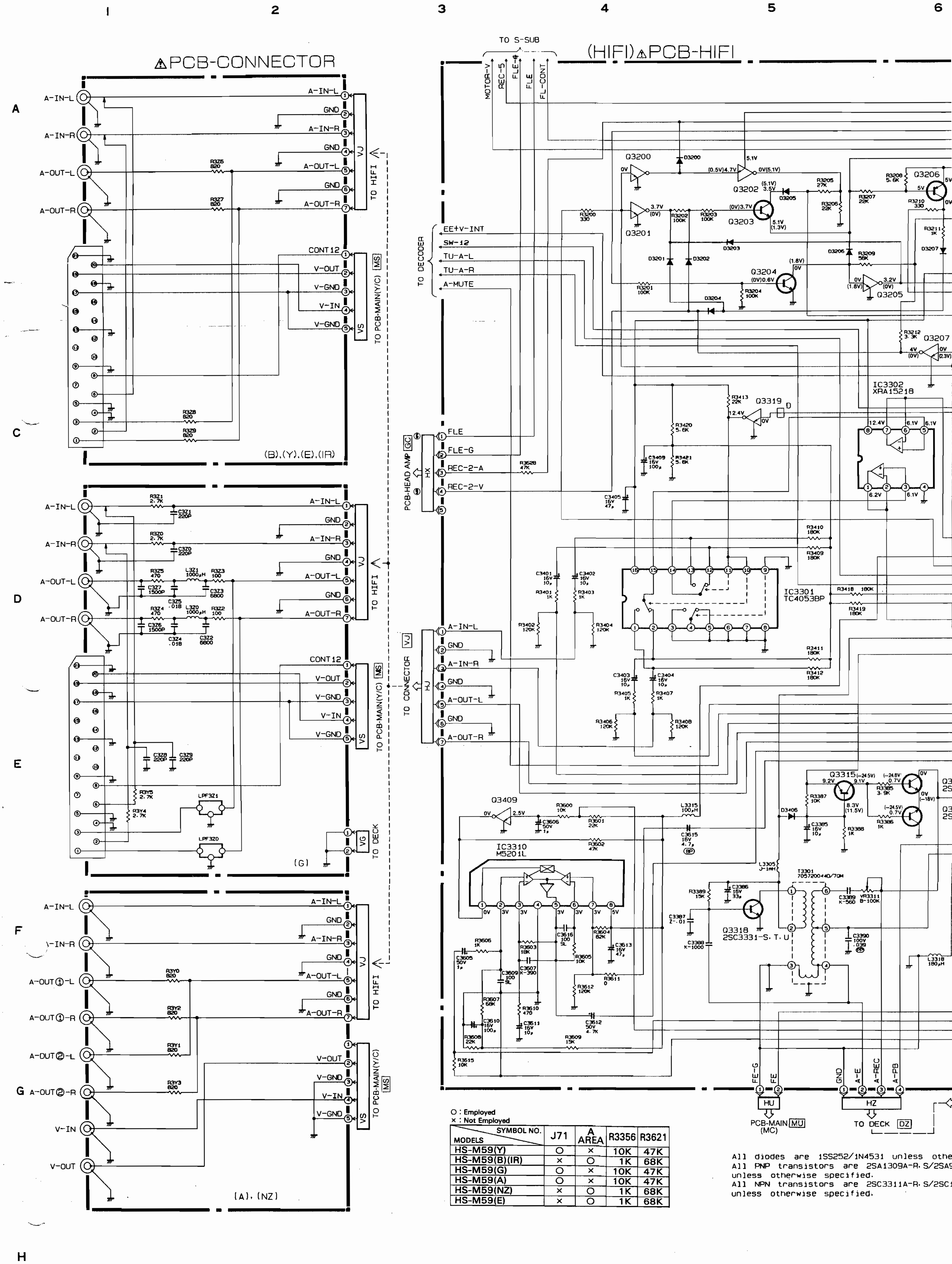
HS-M59(Y),(A),(G) (DECODER)⚠PCB-HIFI


9
10
11
12
13
14
15
16
TP74
TP73
TP75
TP70
TP71
TP72
C779 16V 47µ
C780 MN-.01
C773 50V 1µ
C774 50V 1µ
VR756 20K
R776 F-13K
R777 F-5.6K
D752
D751
D750
LC752 5.5MHZ
R775 1K
R774 1K
C778 .01
C776 33P CH
R773 10K
C775 15P CH
C772 50V 1µ
C771 50V 1µ
C770 .01
C769 MN-.01
C768 .01 -Z
R772 100K
R771 22K
CF751 SFT5.5MA
IC750 IR3P72
Q750 2SC1906
R750 10K
R778 1K
C752 .01
C751 .01
R751 10K
R752 1.5K
C781 22P
L754 33µH
R753 470
L750 100µH
CF750 SFT5.74MA
L753 33µH
R754 1K
C753 MN-.01
C782 100P SL
C754 50V 3.3µ
R755 12K
C759 15P CH
C760 33P CH
R765 10K
LC751 5.74MHZ
R767 5.6K
C761 50V 3.3µ
R780 0
VR751 10K
C762 50V 2.2µ
R768 F-820K
R769 F-390K
VR752 1M
VR753 500K
C763 50V 3.3µ
C764 50V 3.3µ
C765 .068
R770 47K
VR754 100K
C766 .047
C767 25V 10µ
Q751 2SC1740-R,S
R757 47K
R756 8.2K
C755 MN-.01
C756 .01
CF752 SFK54.7B
R758 10K
R760 1K
R763 10K
R752 1K
R759 10K
R761 1K
C757 .01
R764 10K
Q752 2SA933S
12.3V
11.6V
10.4V
6.1V
5.5V
GND
SIF
TO PCB-MAIN (TUNER SUB)
MO
HO
STEREO
N.C
2CH
N.C
HI
TO PCB-TIMER
TI
NI
TO PCB-TIMER
EE+V-INT
SW-12
TU-A-L
TU-A-R
A-MUTE
TO HIFI
NH
TO PCB-HIFI

All diodes are 1SS252 unless otherwise specified


IC7Y1 M51366SP
LOCK DET
AFT
APC DET
+45°
-45°
VCO
FM DET
BNC
VIDEO DET
LIM
LIM
LIM
EQ
RF AGC
IF AGC
2ND IF AMP
1ST IF AMP
SIF DET

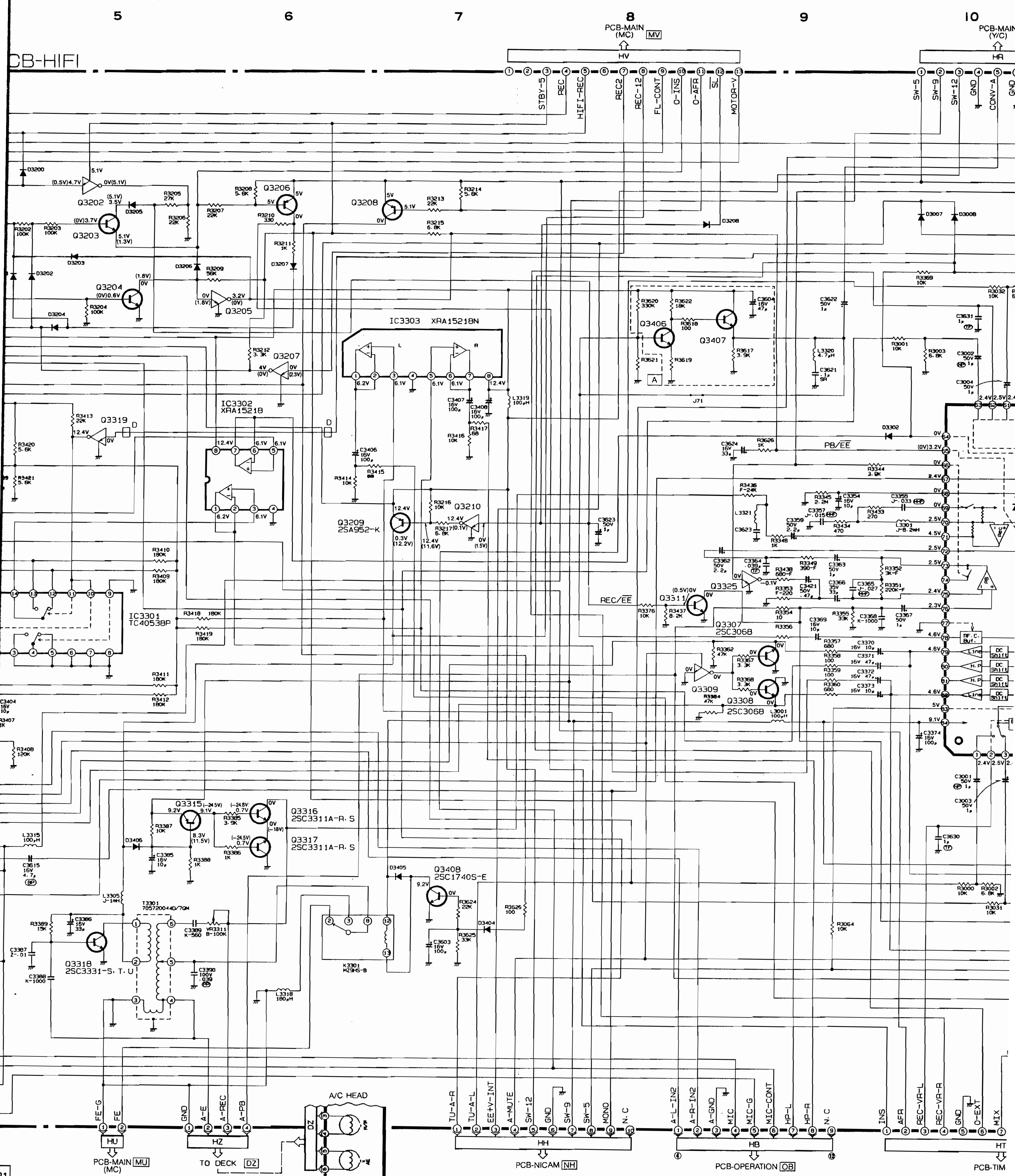

IC750 IR3P72
DEEMPHASIS (50µ S)
SIF(5.5MHz) LIMIT DET
SIF(5.74MHz) LIMIT DET
DEEMPHASIS (50µ S)
MUTE
MUTE
MATRIX
LED DRIVER
DISCRIMINATE
VCO(196Hz)
PHASE COMPA.
NOISE AMP
NOISE DET
274.1Hz BPF
BPF(3.5fH)
MONO/MONO CANCEL
AM DET
117.5Hz BPF

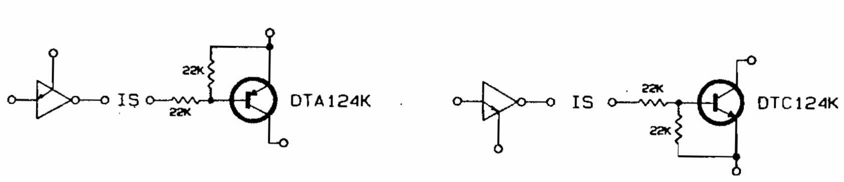

1
2
3
4
5
6
A
C
D
E
F
G
H
⚠PCB-CONNECTOR
(HIFI)⚠PCB-HIFI
TO S-SUB
MOTOR-V
REC-5
FLE-Φ
FLE
FL-CONT
TO DECODER
EE+V-INT
SW-12
TU-A-L
TU-A-R
A-MUTE
A-IN-L
A-IN-R
A-OUT-L
A-OUT-R
GND
CONT12
V-OUT
V-GND
V-IN
VJ
VS
VG
HX
HJ
HU
HZ
TO HIFI
TO PCB-MAIN(Y/C) MS
TO DECK
PCB-HEAD AMP GC
TO CONNECTOR VJ
PCB-MAIN MU (MC)
TO DECK DZ
FLE-G
REC-2-A
REC-2-V
FE-G
FE
A-E
A-REC
A-PB
(B),(Y),(E),(IR)
(G)
(A),(NZ)
A-OUT①-L
A-OUT①-R
A-OUT②-L
A-OUT②-R
Q3200
Q3201
Q3202
Q3203
Q3204
Q3205
Q3206
Q3207
Q3319
Q3409
Q3315
Q3318
2SC3331-S,T,U
IC3301
TC4053BP
IC3302
XRA15218
IC3310
M5201L
T3301
LPF320
LPF321

O : Employed
× : Not Employed

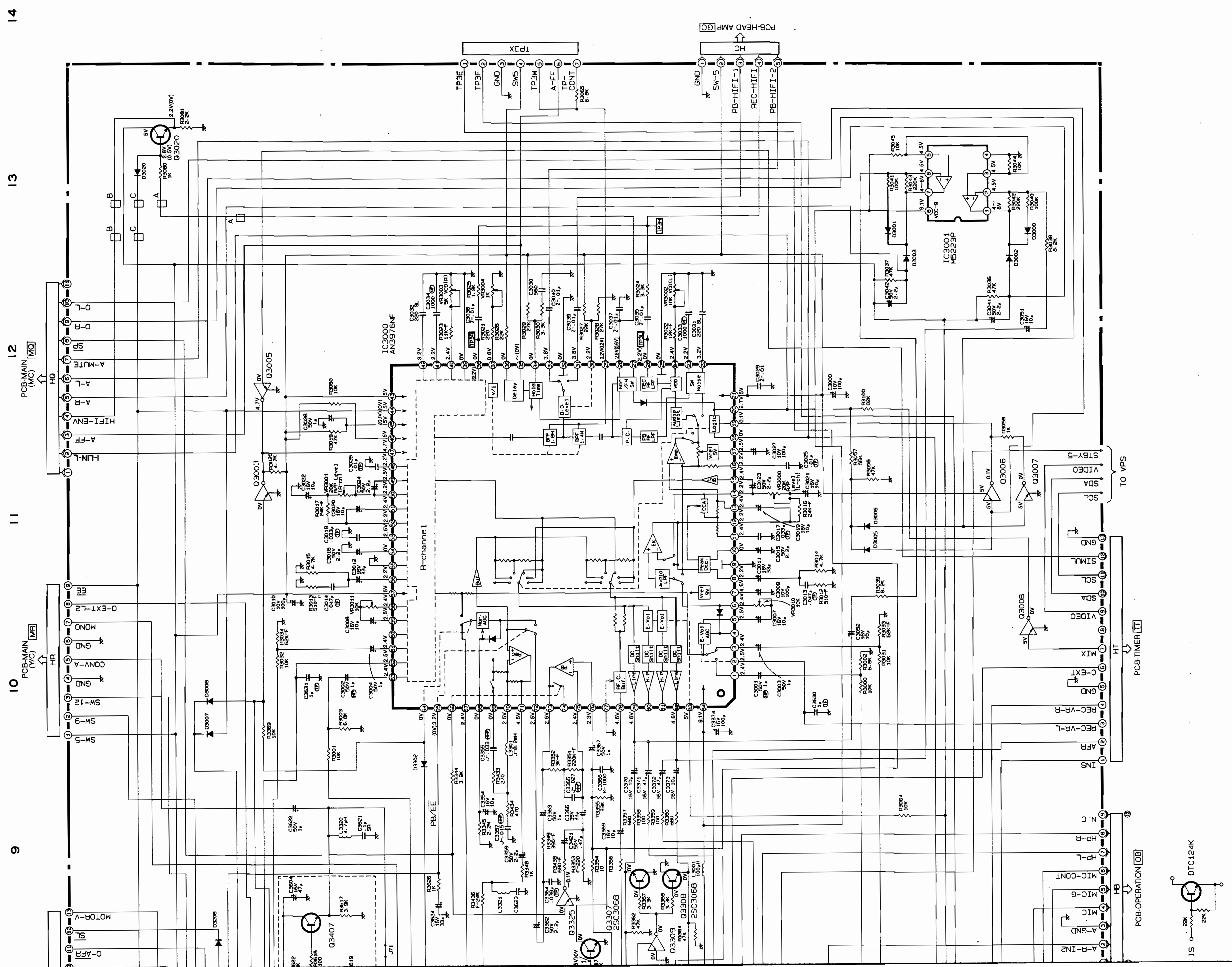
MODELS \ SYMBOL NO.	J71	A AREA	R3356	R3621
HS-M59(Y)	O	×	10K	47K
HS-M59(B)(IR)	×	O	1K	68K
HS-M59(G)	O	×	10K	47K
HS-M59(A)	O	×	10K	47K
HS-M59(NZ)	×	O	1K	68K
HS-M59(E)	×	O	1K	68K

All diodes are 1SS252/1N4531 unless othe
All PNP transistors are 2SA1309A-R,S/2SA
unless otherwise specified.
All NPN transistors are 2SC3311A-R,S/2SC
unless otherwise specified.

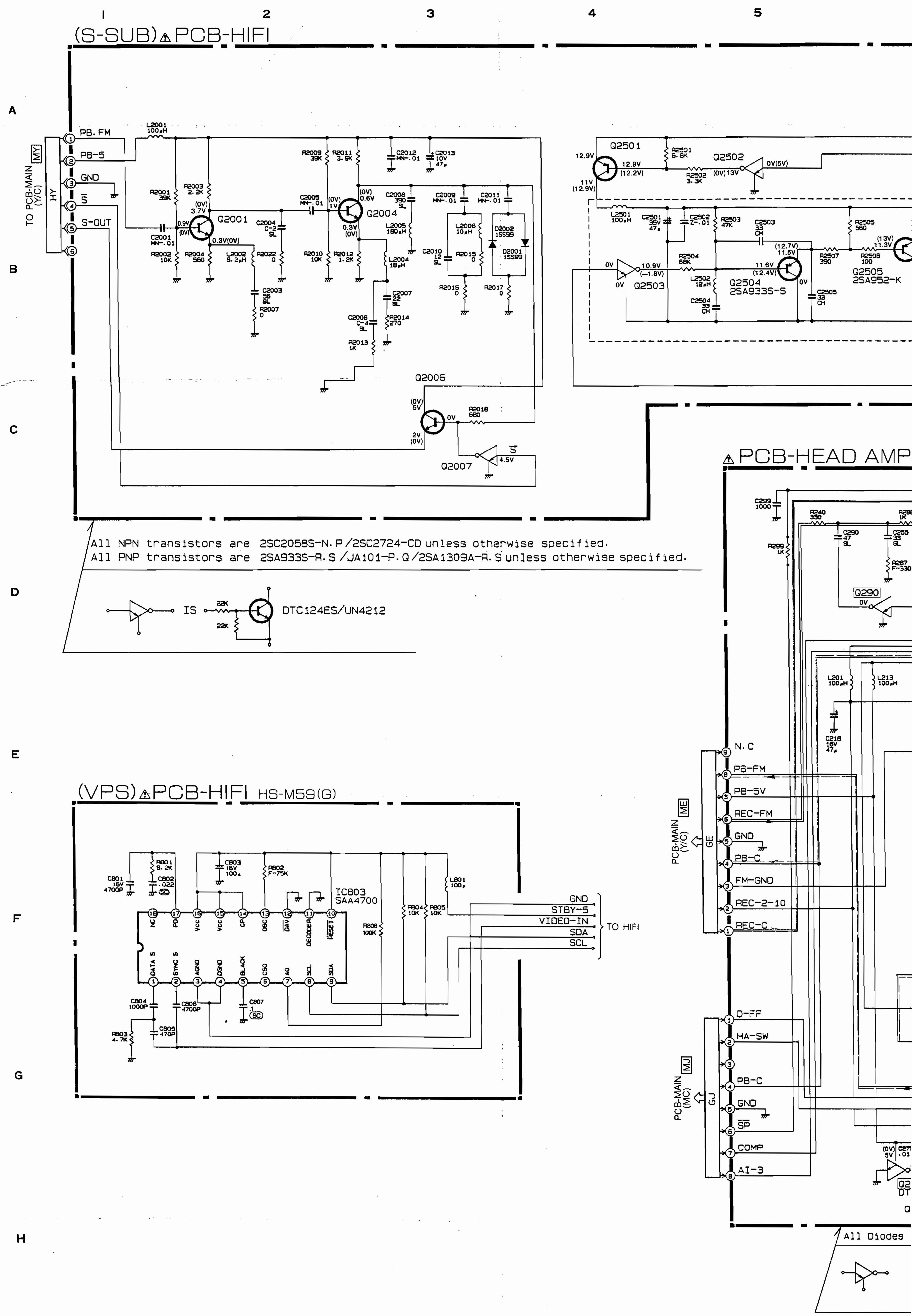

5
6
7
8
9
10
CB-HIFI
PCB-MAIN (MC) MV
HV
STBY-5
REC
HIFI-REC
REC2
REC-12
FL-CONT
O-INS
O-AFR
SL
MOTOR-V
PCB-MAIN (Y/C)
HR
SW-5
SW-9
SW-12
GND
CONV-A
Q3202
Q3203
Q3204
Q3205
Q3206
Q3207
Q3208
Q3209 2SA952-K
Q3210
Q3311
Q3325
Q3307 2SC3068
Q3308 2SC3068
Q3309
Q3315
Q3316 2SC3311A-R. S
Q3317 2SC3311A-R. S
Q3318 2SC3331-S. T. U
Q3319
Q3406
Q3407
Q3408 2SC1740S-E
IC3301 TC4053BP
IC3302 XRA15218
IC3303 XRA15218N
T3301 7057200440/70M
K3301 MZ9HS-B
PB/EE
REC/EE
J71
RF. C. Buf.
DC Shift
Line
H. P
A/C HEAD
DZ
FE-G
FE
HU
PCB-MAIN MU (MC)
GND
A-E
A-REC
A-PB
HZ
TO DECK DZ
TU-A-R
TU-A-L
EE+V-INT
A-MUTE
SW-12
GND
SW-9
SW-5
MONO
N. C
HH
PCB-NICAM NH
A-L-IN2
A-R-IN2
A-GND
MIC
MIC-G
MIC-CONT
HP-L
HP-R
N. C
HB
PCB-OPERATION OB
INS
AFR
REC-VR-L
REC-VR-R
GND
O-EXT
MIX
HT
PCB-TIM


IS
22K
22K
DTA124K
IS
22K
22K
DTC124K

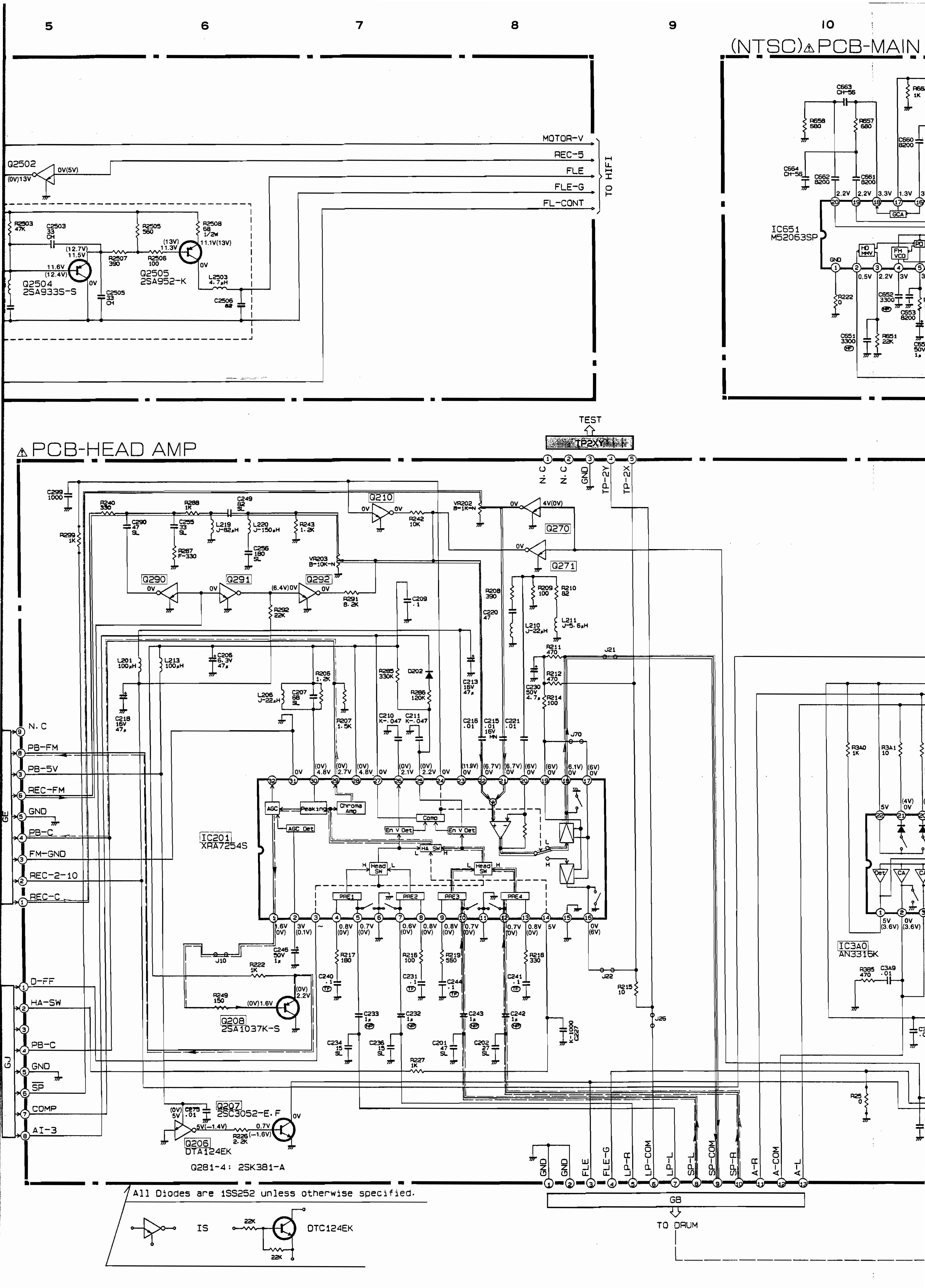
All diodes are 1SS252/1N4531 unless otherwise specified.
All PNP transistors are 2SA1309A-R. S/2SA933S-R. S/JA101-P. Q unless otherwise specified.
All NPN transistors are 2SC3311A-R. S/2SC1740S-R. S/JC501-P. Q unless otherwise specified.


14
13
12
11
10
9
TP3X
TP3E
TP3F
GND
SW5
TP3W
A-FF
TP-CONT
PCB-HEAD AMP GC
HC
GND
SW-5
PB-HIFI-1
REC-HIFI
PB-HIFI-2
Q3020
IC3000
AN3976NF
IC3001
M5223P
R-channel
PCB-MAIN (MC) MQ
HQ
O-L
O-R
SP
A-MUTE
A-L
A-R
HIFI-ENV
A-FF
LIN-L
PCB-MAIN (Y/C) MR
HR
EE
O-EXT-L2
MONO
GND
CONV-A
GND
SW-12
SW-9
SW-5
MOTOR-V
SL
O-AFR
Q3005
Q3003
Q3006
Q3007
Q3008
Q3325
Q3307 2SC3068
Q3308 2SC3068
Q3309
Q3407
PB/EE
TO VPS
STBY-5
VIDEO
SDA
SCL
PCB-TIMER TT
HT
GND
SIMUL
SCL
SDA
VIDEO
MIX
O-EXT
GND
REC-VR-R
REC-VR-L
AFR
INS
PCB-OPERATION OB
HB
N.C
HP-R
HP-L
MIC-CONT
MIC-G
MIC
A-GND
A-R-INS
DTC124K
IS
22K
22K
Delay
Hold Time
D.O. Level
BPF 1.8M
BPF 1.4M
P.C.
PB RF LPF
REC LPF
VDD
SW Noise
Audio Limit
Logic
Vref 5V
CCA
EX
Peak Dec.
Audio LPF
Vref 5V
E.Vol AGC
E.Vol
DC Shift
H.P
AGC
Buf
Buf
Rf C. Buf

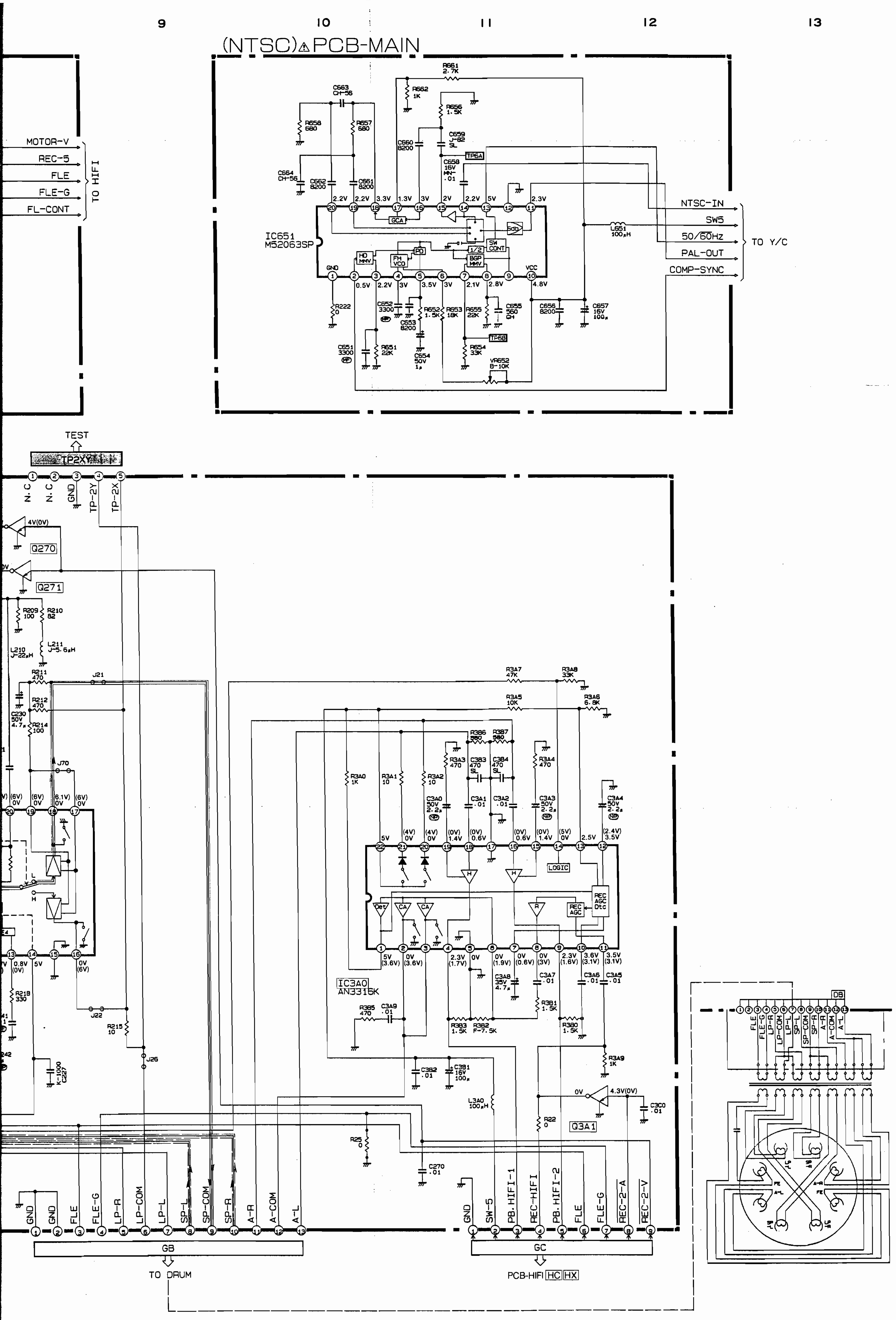
HS-M59(Y)(B)(IR)(E)
HS-M59(A)(NZ)
(2/5)


1
2
3
4
5
A
B
C
D
E
F
G
H
(S-SUB) ⚠ PCB-HIFI
TO PCB-MAIN MY (Y/C)
HY
PB. FM
PB-5
GND
SI
S-OUT
L2001 100μH
R2001 39K
R2002 10K
C2001 MN-.01
R2003 2.2K
R2004 560
Q2001
L2002 8.2μH
R2022 0
C2003 56 SL
R2007 0
C2004 C-2 SL
R2009 39K
R2011 3.9K
R2010 10K
R2012 1.2K
C2005 MN-.01
Q2004
C2012 MN-.01
C2013 10V 47μ
C2008 390 SL
L2005 180μH
L2004 18μH
C2007 22 SL
R2014 270
C2006 C-4 SL
R2013 1K
C2009 MN-.01
C2011 MN-.01
L2006 10μH
C2010 12 SL
R2015 0
R2016 0
D2002 1SS99
D2001 1SS99
R2017 0
Q2006
R2018 680
Q2007
4.5V
Q2501
R2501 6.8K
Q2502
R2502 3.3K
L2501 100μH
C2501 35V 47μ
C2502 Z-.01
R2503 47K
C2503 33 CH
R2504 68K
L2502 12μH
C2504 33 CH
Q2503
Q2504 2SA933S-S
C2505 33 CH
R2507 390
R2505 560
R2506 100
Q2505 2SA952-K
IS
22K
DTC124ES/UN4212
(VPS) ⚠ PCB-HIFI HS-M59(G)
IC803 SAA4700
C801 16V 4700P
R801 8.2K
C802 .022
C803 16V 100μ
R802 F-75K
L801 100μ
R804 10K
R805 10K
R806 100K
C804 1000P
C805 470P
C806 4700P
C807 .1
R803 4.7K
NC
PD
Vcc
Vcc
CP
OSC
DAV
DECODER
RESET
DATA S
SYNC S
AGND
DGND
BLACK
CSO
AO
SCL
SDA
GND
STBY-5
VIDEO-IN
SDA
SCL
TO HIFI
⚠ PCB-HEAD AMP
C299 1000
R299 1K
R240 330
C290 47 SL
C255 33 SL
R287 F-330
Q290
L201 100μH
L213 100μH
C218 16V 47μ
PCB-MAIN ME (Y/C)
GE
N. C
PB-FM
PB-5V
REC-FM
GND
PB-C
FM-GND
REC-2-10
REC-C
PCB-MAIN MJ (MC)
GJ
D-FF
HA-SW
PB-C
GND
SP
COMP
AI-3
All Diodes

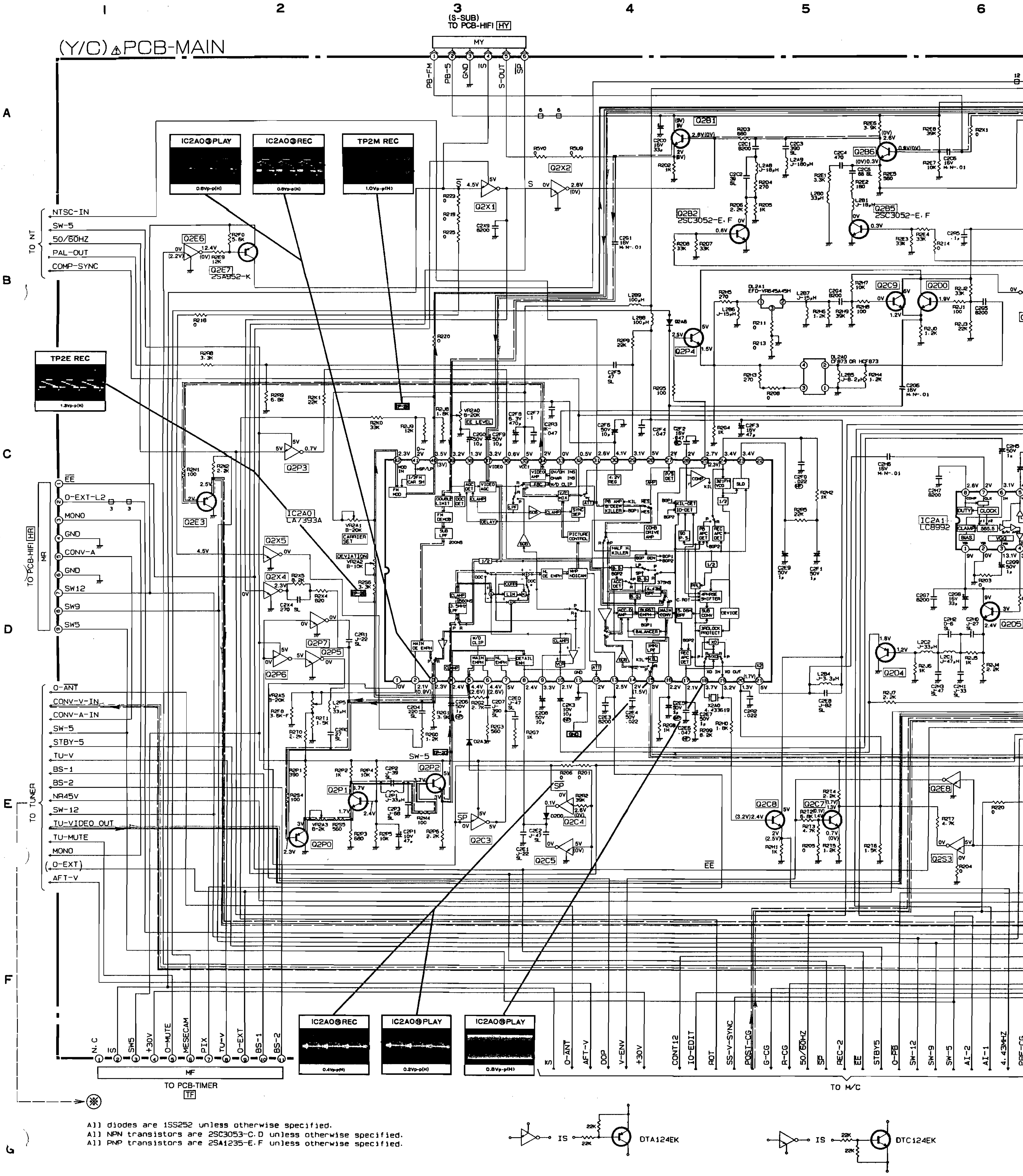
All NPN transistors are 2SC2058S-N.P/2SC2724-CD unless otherwise specified.
All PNP transistors are 2SA933S-R.S/JA101-P.Q/2SA1309A-R.S unless otherwise specified.


5
6
7
8
9
10
(NTSC)⚠PCB-MAIN
⚠PCB-HEAD AMP
IC651
M52063SP
IC201
XRA7254S
IC3A0
AN3316K
Q2502
Q2504
2SA933S-S
Q2505
2SA952-K
Q210
Q270
Q271
Q290
Q291
Q292
Q208
2SA1037K-S
Q207
2SC3052-E.F
Q206
DTA124EK
Q281-4: 2SK381-A
MOTOR-V
REC-5
FLE
FLE-G
FL-CONT
TO HIFI
TEST
TP2XY
N.C
N.C
GND
TP-2Y
TP-2X
N.C
PB-FM
PB-5V
REC-FM
GND
PB-C
FM-GND
REC-2-10
REC-C
GE
D-FF
HA-SW
PB-C
GND
SP
COMP
AI-3
GJ
GND
GND
FLE
FLE-G
LP-R
LP-COM
LP-L
SP-L
SP-COM
SP-R
A-R
A-COM
A-L
GB
TO DRUM
AGC
Peaking
Chroma Amp
AGC Det
Comp
En V Det
En V Det
HA SW
Head SW
Head SW
PRE1
PRE2
PRE3
PRE4
GCA
PD
FH VCO
HD MMV
Det
CA
CA
IS
DTC124EK
22K
22K

All Diodes are 1SS252 unless otherwise specified.

9
10
11
12
13
(NTSC)⚠PCB-MAIN
IC651
M52063SP
GCA
SW CONT
BGP MMV
HD MMV
FH VCO
PD
1/2
5db
GND
VCC
TP6A
TP6B
VR652
B-10K
L651
100μH
NTSC-IN
SW5
50/60Hz
PAL-OUT
COMP-SYNC
TO Y/C
MOTOR-V
REC-5
FLE
FLE-G
FL-CONT
TO HIFI
TEST
TP2XY
N.C
N.C
GND
TP-2Y
TP-2X
Q270
Q271
4V(0V)
R209
100
R210
82
L210
J-22μH
L211
J-5.6μH
R211
470
R212
470
R214
100
C230
50V
4.7μ
J21
J70
J22
J26
R215
10
R218
330
IC3A0
AN3316K
REC AGC Dtc
REC AGC
LOGIC
Det
CA
R
H
R3A0
1K
R3A1
10
R3A2
10
R3A3
470
R3A4
470
R3A5
10K
R3A6
6.8K
R3A7
47K
R3A8
33K
R3A9
1K
R385
470
R386
560
R387
560
R380
1.5K
R381
1.5K
R382
F-7.5K
R383
1.5K
C3A9
.01
C381
16V
100μ
C382
.01
C270
.01
R25
0
R22
0
L3A0
100μH
Q3A1
4.3V(0V)
C3C0
.01
GND
GND
FLE
FLE-G
LP-R
LP-COM
LP-L
SP-L
SP-COM
SP-R
A-R
A-COM
A-L
GB
TO DRUM
GND
SW-5
PB.HIFI-1
REC-HIFI
PB.HIFI-2
FLE
FLE-G
REC-2-A
REC-2-V
GC
PCB-HIFI HC HX
DB
FLE
FLE-G
LP-R
LP-COM
LP-L
SP-L
SP-COM
SP-R
A-R
A-COM
A-L
FE
A-L
A-R
SP-L
SP-R

(Y/C) ⚠PCB-MAIN



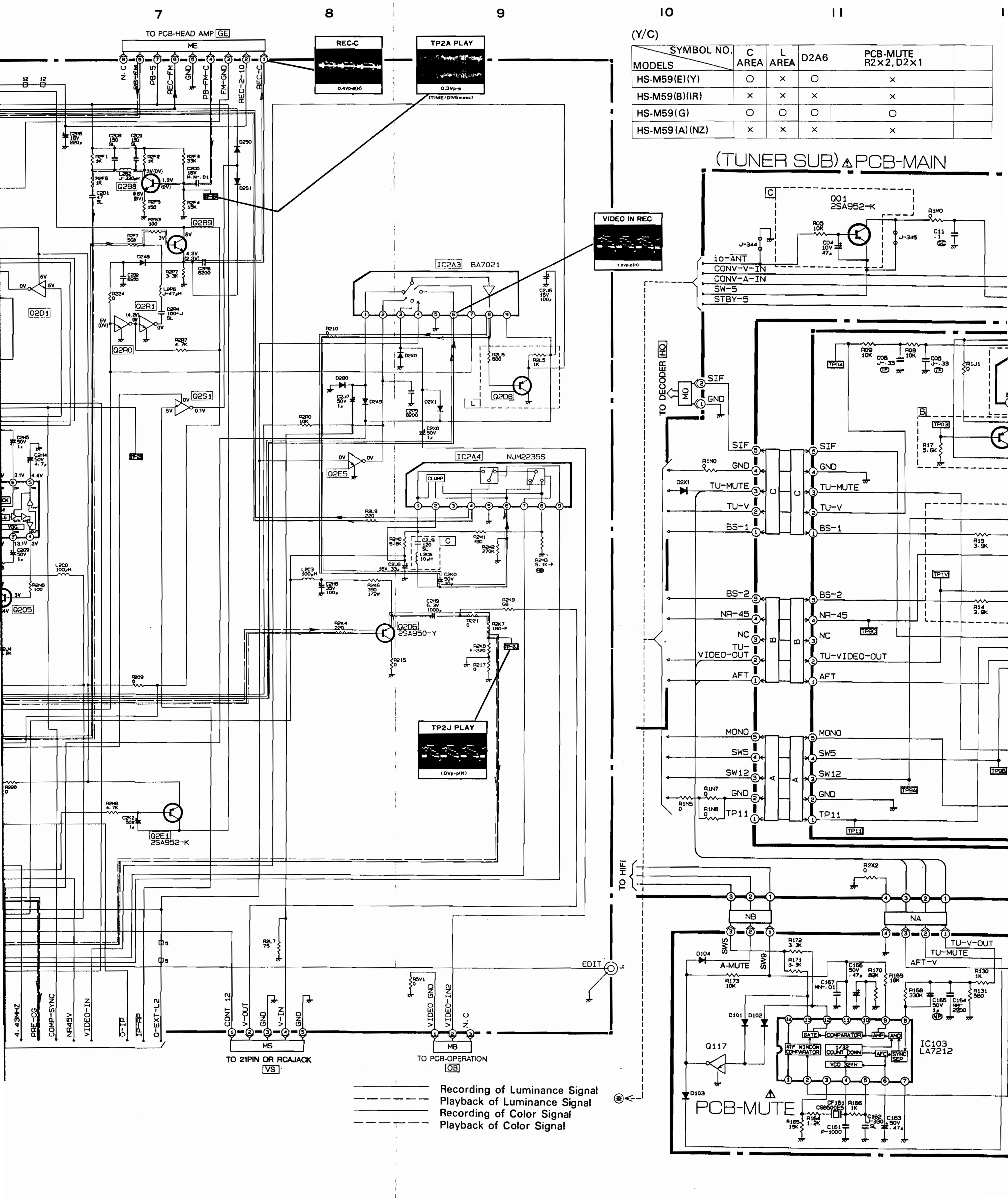
1
2
3
4
5
6
A
B
C
D
E
F
(S-SUB)
TO PCB-HIFI HY
MY
PB-FM
PB-5
GND
IN
S-OUT
SP
IC2A0⑦PLAY
0.6Vp-p(H)
IC2A0⑦REC
0.6Vp-p(H)
TP2M REC
1.0Vp-p(H)
TP2E REC
1.8Vp-p(H)
TO NT
NTSC-IN
SW-5
50/60HZ
PAL-OUT
COMP-SYNC
TO PCB-HIFI HR
MR
EE
O-EXT-L2
MONO
GND
CONV-A
GND
SW12
SW9
SW5
TO TUNER
O-ANT
CONV-V-IN
CONV-A-IN
SW-5
STBY-5
TU-V
BS-1
BS-2
NR45V
SW-12
TU-VIDEO OUT
TU-MUTE
MONO
(O-EXT)
AFT-V
Q2E6
Q2E7
2SA952-K
Q2E3
Q2X1
Q2X2
Q2X4
Q2X5
Q2P0
Q2P1
Q2P2
Q2P3
Q2P4
Q2P5
Q2P6
Q2P7
Q2B1
Q2B2
2SC3052-E.F
Q2B5
2SC3052-E.F
Q2B6
Q2C3
Q2C4
Q2C5
Q2C7
Q2C8
Q2C9
Q2D0
Q2D4
Q2D5
Q2E8
Q2S3
IC2A0
LA7393A
IC2A1
LC8992
DL2A0
CF873 OR HCF873
DL2A1
EFD-VR645A45M
CARRIER SET
DEVIATION
EE LEVEL
SW-5
SP
EE
IC2A0⑮REC
0.4Vp-p(H)
IC2A0⑮PLAY
0.2Vp-p(H)
IC2A0⑭PLAY
0.8Vp-p(H)
MF
TO PCB-TIMER TF
N.C
IS
SW5
+30V
O-MUTE
MESECAM
PIX
TU-V
O-EXT
BS-1
BS-2
KS
O-ANT
AFT-V
DOP
V-ENV
+30V
CONT12
IO-EDIT
ROT
SS-V-SYNC
POST-CG
G-CG
R-CG
50/60HZ
SP
REC-2
EE
STBY5
O-PB
SW-12
SW-9
SW-5
AI-2
AI-1
4.43MHZ
TO M/C
※

All diodes are 1SS252 unless otherwise specified.
All NPN transistors are 2SC3053-C.D unless otherwise specified.
All PNP transistors are 2SA1235-E.F unless otherwise specified.

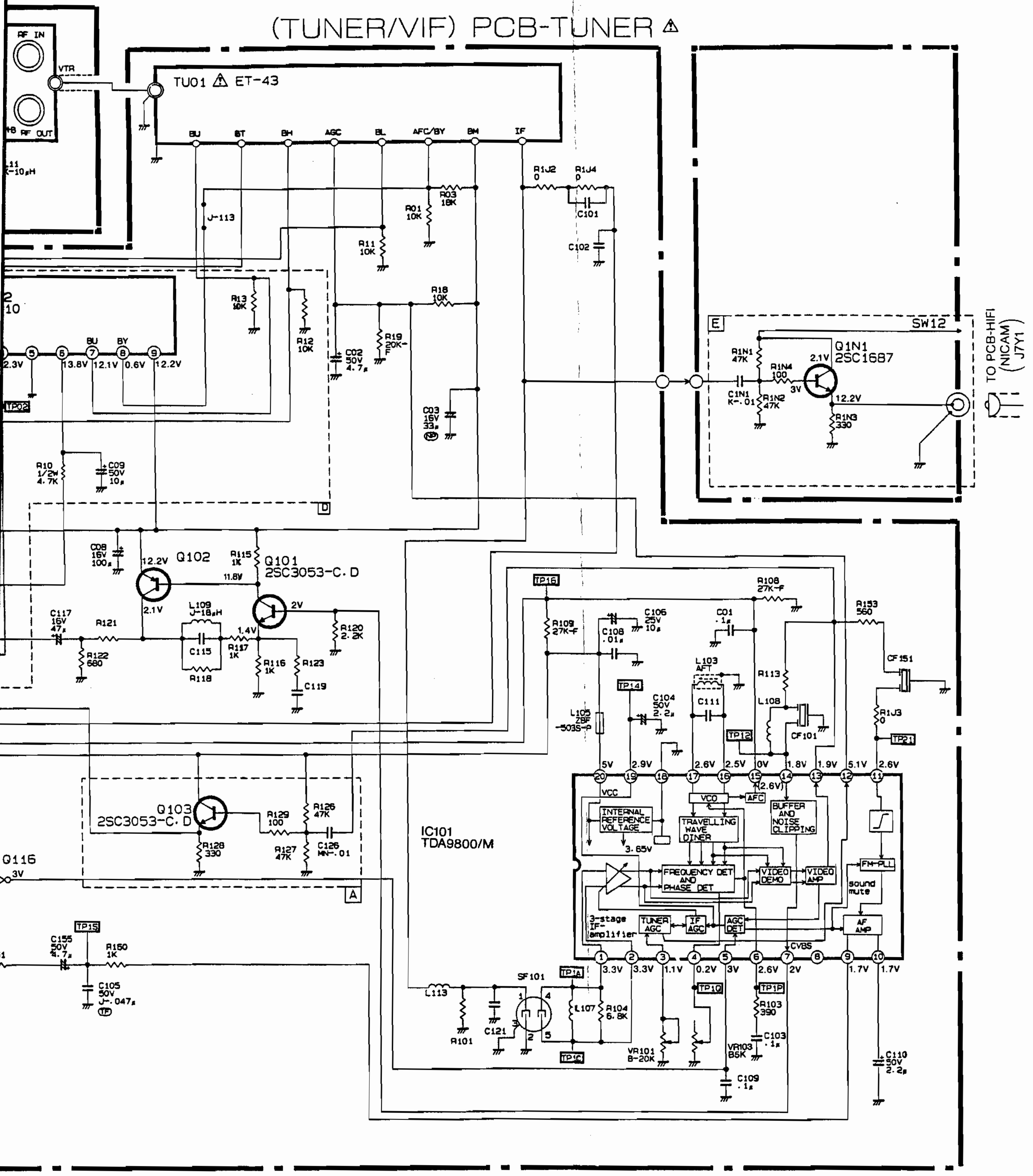
IS
22K
22K
DTA124EK
IS
22K
22K
DTC124EK

(Y/C)

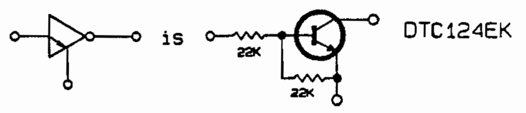
SYMBOL NO. MODELS	C AREA	L AREA	D2A6	PCB-MUTE R2×2, D2×1
HS-M59(E)(Y)	○	×	○	×
HS-M59(B)(IR)	×	×	×	×
HS-M59(G)	○	○	○	○
HS-M59(A)(NZ)	×	×	×	×


7
8
9
10
11
TO PCB-HEAD AMP GE
ME
N.C
PB-EM
PB-5
REC-FM
GND
PB-FM-C
FM-GND
REC-2-10
REC-C
REC-C
0.4Vp-p(H)
TP2A PLAY
0.3Vp-p
(TIME/DIV5msec)
VIDEO IN REC
1.8Vp-p(H)
(TUNER SUB) ⚠PCB-MAIN
Q01
2SA952-K
IC2A3 BA7021
IC2A4 NJM2235S
CLUMP
Q2B8
Q2B9
Q2R1
Q2R0
Q2D1
Q2S1
Q2D8
Q2E5
Q2D6
2SA950-Y
Q2E1
2SA952-K
Q205
TP2J PLAY
1.0Vp-p(H)
io-ANT
CONV-V-IN
CONV-A-IN
SW-5
STBY-5
TO DECODER HO
MO
SIF
GND
TU-MUTE
TU-V
BS-1
BS-2
NR-45
NC
TU-VIDEO-OUT
AFT
MONO
SW5
SW12
TP11
TO HIFI
NB
NA
TU-V-OUT
TU-MUTE
AFT-V
A-MUTE
SW5
SW9
Q117
IC103
LA7212
GATE
COMPARATOR
AMP
AND
ATF WINDOW COMPARATOR
1/32 COUNT DOWN
AFC
SYNC SEP
VCO 32fH
⚠ PCB-MUTE
EDIT
4.43MHZ
PRE-CG
COMP-SYNC
NR45V
VIDEO-IN
0-IP
IP-RP
0-EXT-L2
CONT 12
V-OUT
GND
V-IN
GND
TO 21PIN OR RCAJACK
VS
VIDEO GND
VIDEO-IN2
N.C
MB
TO PCB-OPERATION
OB
Recording of Luminance Signal
Playback of Luminance Signal
Recording of Color Signal
Playback of Color Signal

13 14 15 16 17 18


(TUNER/VIF) PCB-TUNER ⚠
TU01 ⚠ ET-43
RF IN
VTR
RF OUT
BU
BT
BH
AGC
BL
AFC/BY
BM
IF
J-113
R01 10K
R03 18K
R11 10K
R12 10K
R13 10K
R18 10K
R19 20K-F
C02 50V 4.7μ
C03 16V 33μ
R1J2 0
R1J4 0
C101
C102
SW12
Q1N1 2SC1687
R1N1 47K
R1N2 47K
R1N3 330
R1N4 100
C1N1 K-.01
2.1V
3V
12.2V
TO PCB-HIFI (NICAM) (J7Y1)
Q101 2SC3053-C.D
Q102
Q103 2SC3053-C.D
Q116
R10 1/2W 4.7K
C09 50V 10μ
C08 16V 100μ
C117 16V 47μ
R115 1K
R116 1K
R117 1K
R118
R120 2.2K
R121
R122 680
R123
C119
C115
L109 J-18μH
R126 47K
R127 47K
R128 330
R129 100
C126 MN-.01
R150 1K
C155 50V 4.7μ
C105 50V J-.047μ
TP15
TP16
TP14
TP12
TP21
TP1A
TP1C
TP1P
TP1Q
TP02
IC101 TDA9800/M
R108 27K-F
R109 27K-F
C106 25V 10μ
C108 .01μ
C01 .1μ
L103 AFT
C104 50V 2.2μ
C111
L105 ZBF -503S-P
R113
L108
CF101
CF151
R133 560
R1J3 0
INTERNAL REFERENCE VOLTAGE
VCO
AFC
TRAVELLING WAVE DIVER
BUFFER AND NOISE CLIPPING
FREQUENCY DET AND PHASE DET
VIDEO DEMO
VIDEO AMP
FM-PLL
sound mute
3-stage IF-amplifier
TUNER AGC
IF AGC
AGC DET
AF AMP
VCC
CVBS
3.65V
SF101
L107
R104 6.8K
R101
C121
L113
VR101 B-20K
VR103 B5K
R103 390
C103 .1μ
C109 .1μ
C110 50V 2.2μ
5V 2.9V 2.6V 2.5V 0V 1.8V 1.9V 5.1V 2.6V
3.3V 3.3V 1.1V 0.2V 3V 2.6V 2V 1.7V 1.7V
12.2V 2.1V 11.8V 1.4V 2V
2.3V 3.8V 12.1V 0.6V 12.2V
E
D
A

All PNP transistors are 2SA1235-E.F unless otherwise specified.

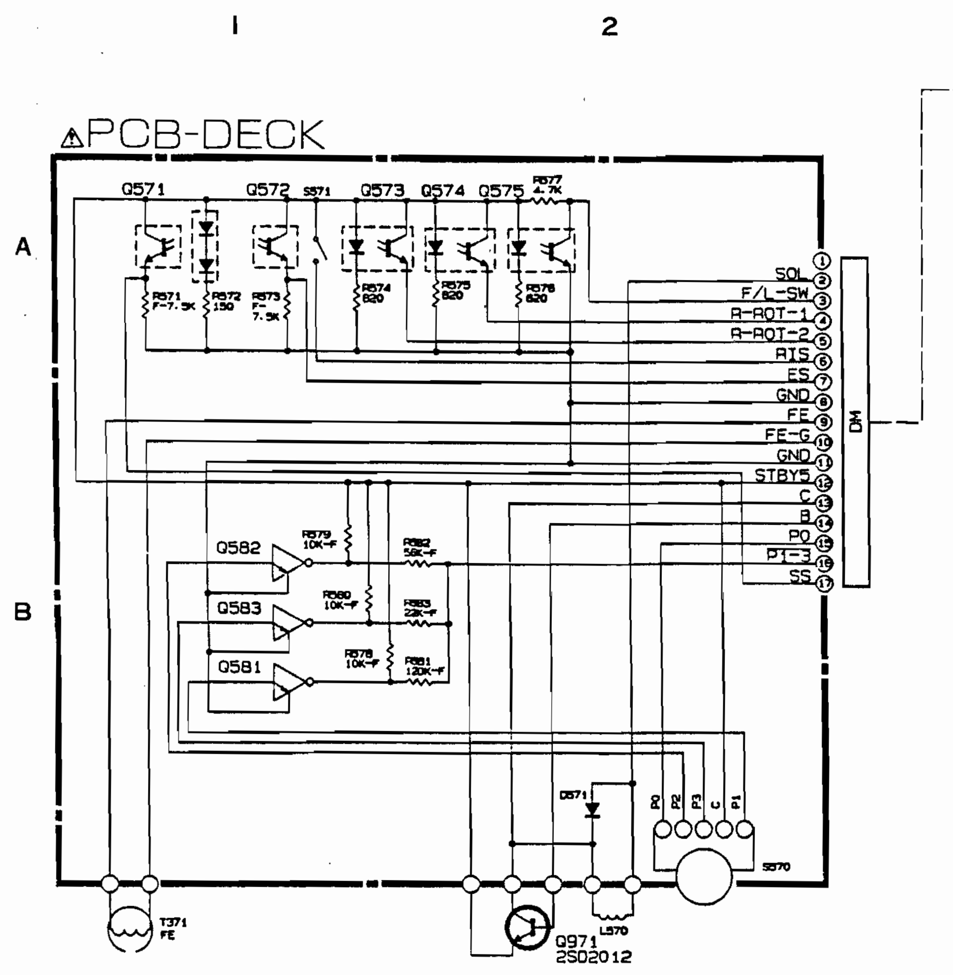

is
22K
22K
DTC124EK

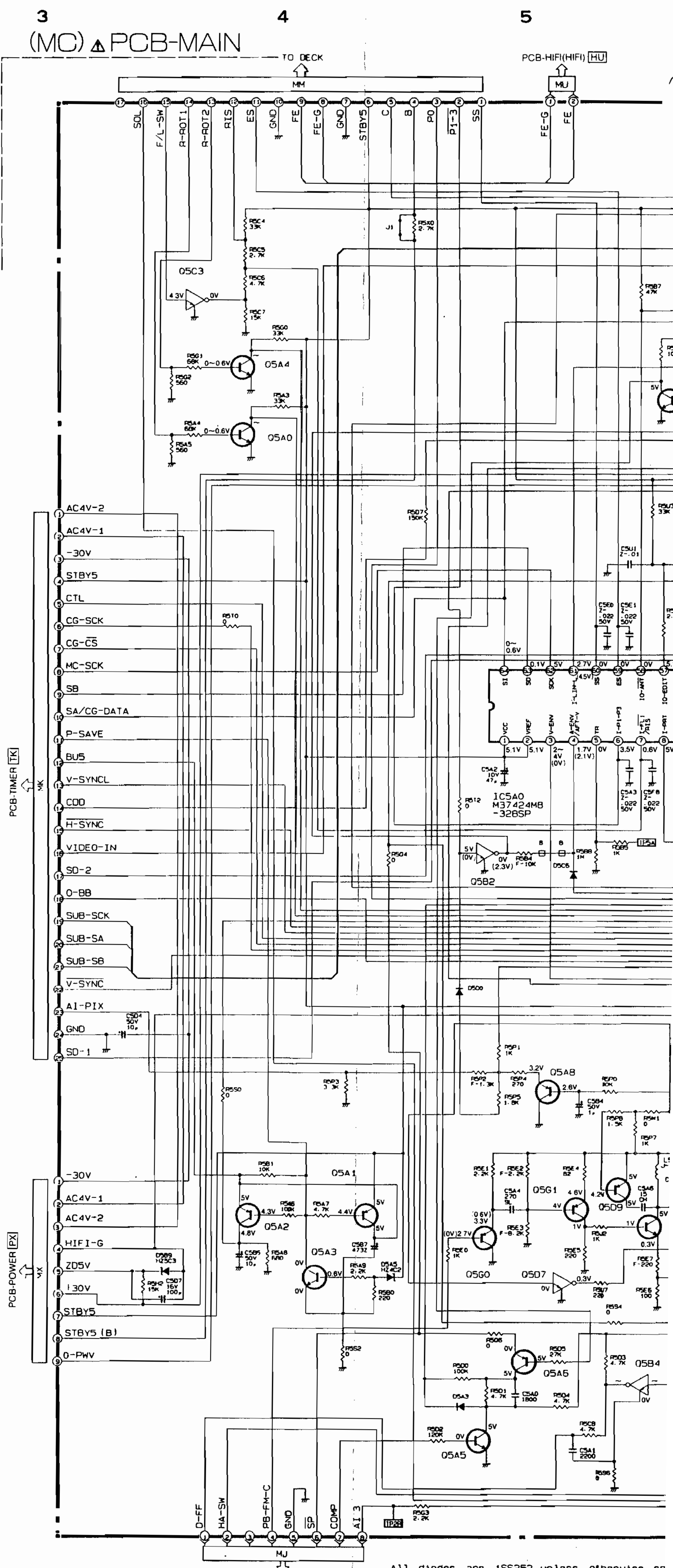
O: Emoloyed x : Not emoloyed

SYMBOL NO. / MODELS	(Y)	(B)	(E)	(IR)	(G)	(A)	(NZ)	
A AREA	O	×	×	×	O	O	×	
B AREA	×	×	O	×	×	×	×	
C AREA	×	×	×	×	×	O	O	
D AREA	O	×	O	O	O	O	O	
E AREA	×	O	O	O	×	×	O	
J-113	×	×	O	×	×	×	×	
J-344	O	O	O	O	O	×	×	
J-345	O	O	O	O	O	×	×	
C101	47 SL	47 SL	47 SL	47 SL	47 SL	47 SL	×	
C102	47 SL	47 SL	47 SL	47 SL	47 SL	47 SL	33 SL	
C111	12 SL	12 SL	12 SL	12 SL	12 SL	12 SL	12 SL	
C115	39 SL	39 SL	39 SL	39 SL	39 SL	39 SL	39 SL	
C119	390 SL	100 SL	180 SL	180 SL	330 SL	270 SL	180 SL	
C121	7 CH	C-10 CH	C-7 CH	C-10 CH	8 CH	7 CH	7 CH	
CF101	5.5/ 5.74/6.5	6.0MHZ	5.5/ 5.74MHZ	6.0MHZ	5.5/ 5.74/6.5	5.5/ 5.74MHZ	5.5MHZ	
CF151	5.5MHZ	6.0MHZ	5.5MHZ	6.0MHZ	5.5MHZ	5.5MHZ	5.5MHZ	
L107	SHIELD K-2.2μH	SHIELD K-2.2μH	SHIELD K-2.2μH	SHIELD K-2.2μH	×	SHIELD K-2.2μH	SHIELD K-2.2μH	
L108	J-5.6μH	J-10μH	J-10μH	J-15μH	J-5.6μH	J-10μH	J-15μH	
L113	J-1.5μH	J-1.2μH	J-1.5μH	J-1.5μH	J-1.2μH	J-1.5μH	J-1.5μH	
R03	O	O	×	O	O	O	O	
R11	O	×	O	O	O	O	O	
R101	F-2.4K	F-910	F-820	F-910	F-5.6K	F-2.4K	F-2.4K	
R113	F-430	F-430	F-430	F-910	F-430	F-750	F-470	
R118	F-2.4K	F-6.8K	F-1.2K	F-750	F-3.3K	F-1K	F-6.8K	
R121	F-1.5K	F-1.5K	F-1.5K	F-1.2K	F-1.5K	F-1.3K	F-1.5K	
R123	F-240	F-1.2K	F-390	F-510	F-270	F-470	F-680	
R161	22K	27K	27K	27K	22K	22K	27K	
R1J1	O	×	×	O	O	O	O	
R1J4	×	×	×	×	×	O	O	

FOR MODEL
HS-M59(G)

HS-M59(Y)(B)(IR)(E)
HS-M59(A)(NZ) (3/5)

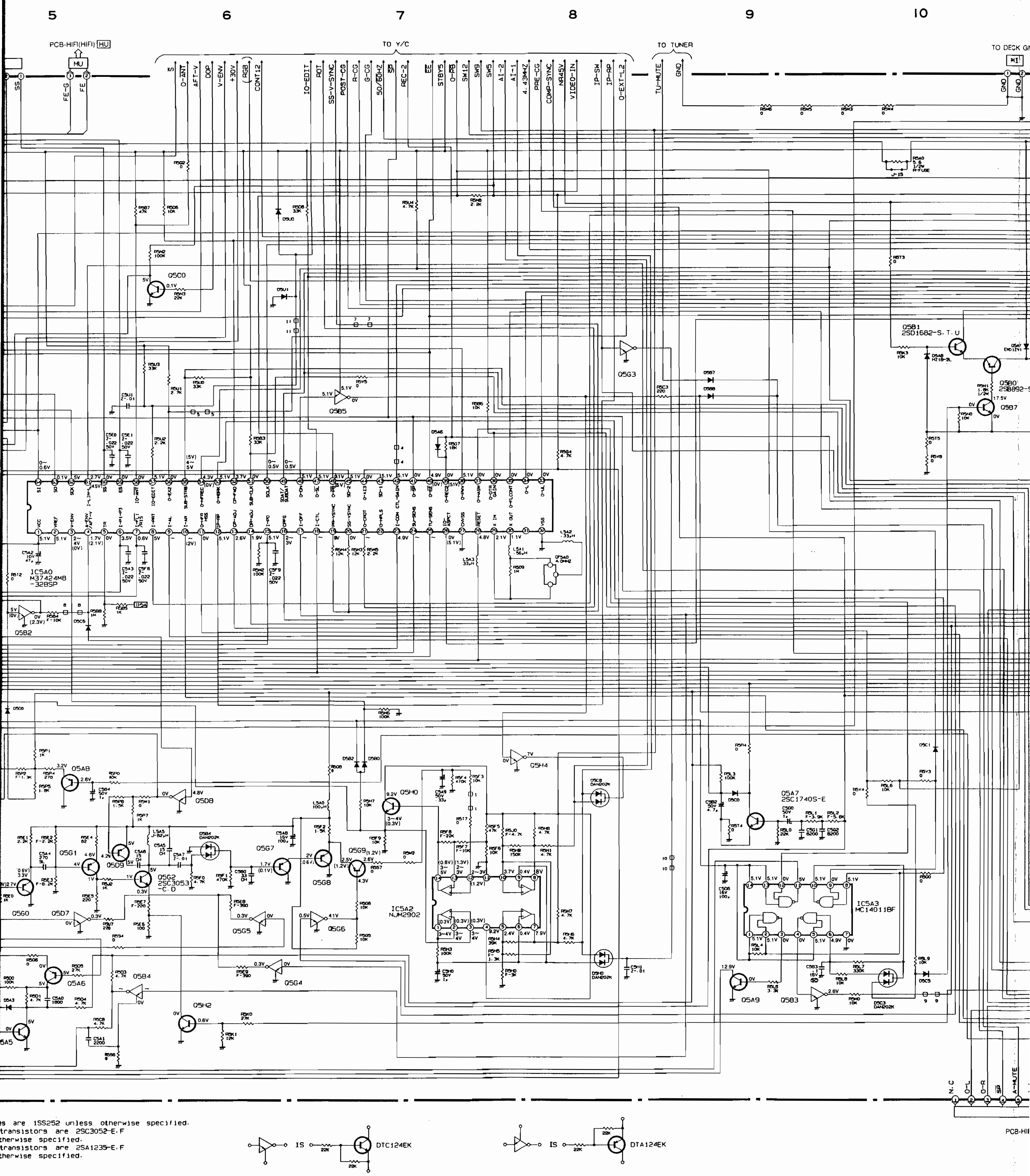

1
2
A
B
C
PCB-DECK
Q571
Q572
S571
Q573
Q574
Q575
R577 4.7K
R571 F-7.5K
R572 150
R573 F-7.5K
R574 820
R575 820
R576 820
SOL
F/L-SW
R-ROT-1
R-ROT-2
RIS
ES
GND
FE
FE-G
GND
STBY5
C
B
PO
P1-3
SS
DM
Q582
Q583
Q581
R579 10K-F
R580 10K-F
R578 10K-F
R582 56K-F
R583 22K-F
R581 120K-F
D571
P0
P2
P3
C
P1
S570
T371 FE
Q971 2SD2012
L570


3
4
5
D
E
F
G
(MC) PCB-MAIN
TO DECK
MM
PCB-HIFI(HIFI) HU
MU
SOL
F/L-SW
R-ROT1
R-ROT2
RIS
ES
GND
FE
FE-G
GND
STBY5
C
B
PO
P1-3
SS
FE-G
FE
PCB-TIMER TK
MK
AC4V-2
AC4V-1
-30V
STBY5
CTL
CG-SCK
CG-CS
MC-SCK
SB
SA/CG-DATA
P-SAVE
BU5
V-SYNCL
CDD
H-SYNC
VIDEO-IN
SD-2
O-BB
SUB-SCK
SUB-SA
SUB-SB
V-SYNC
AI-PIX
GND
SD-1
PCB-POWER PX
MX
-30V
AC4V-1
AC4V-2
HIFI-G
ZD5V
I30V
STBY5
STBY5 (B)
O-PWV
Q5C3
Q5A4
Q5A0
IC5A0
M37424M8
-328SP
Q5B2
Q5A8
Q5A1
Q5A2
Q5A3
Q5G1
Q5G0
Q5D9
Q5D7
Q5A6
Q5A5
Q5B4
D5A5
D589
J1
R5X0
D-FF
HA-SW
PB-FM-C
GND
SP
COMP
AI 3
TP28
MJ
PCB-HEAD AMP GJ

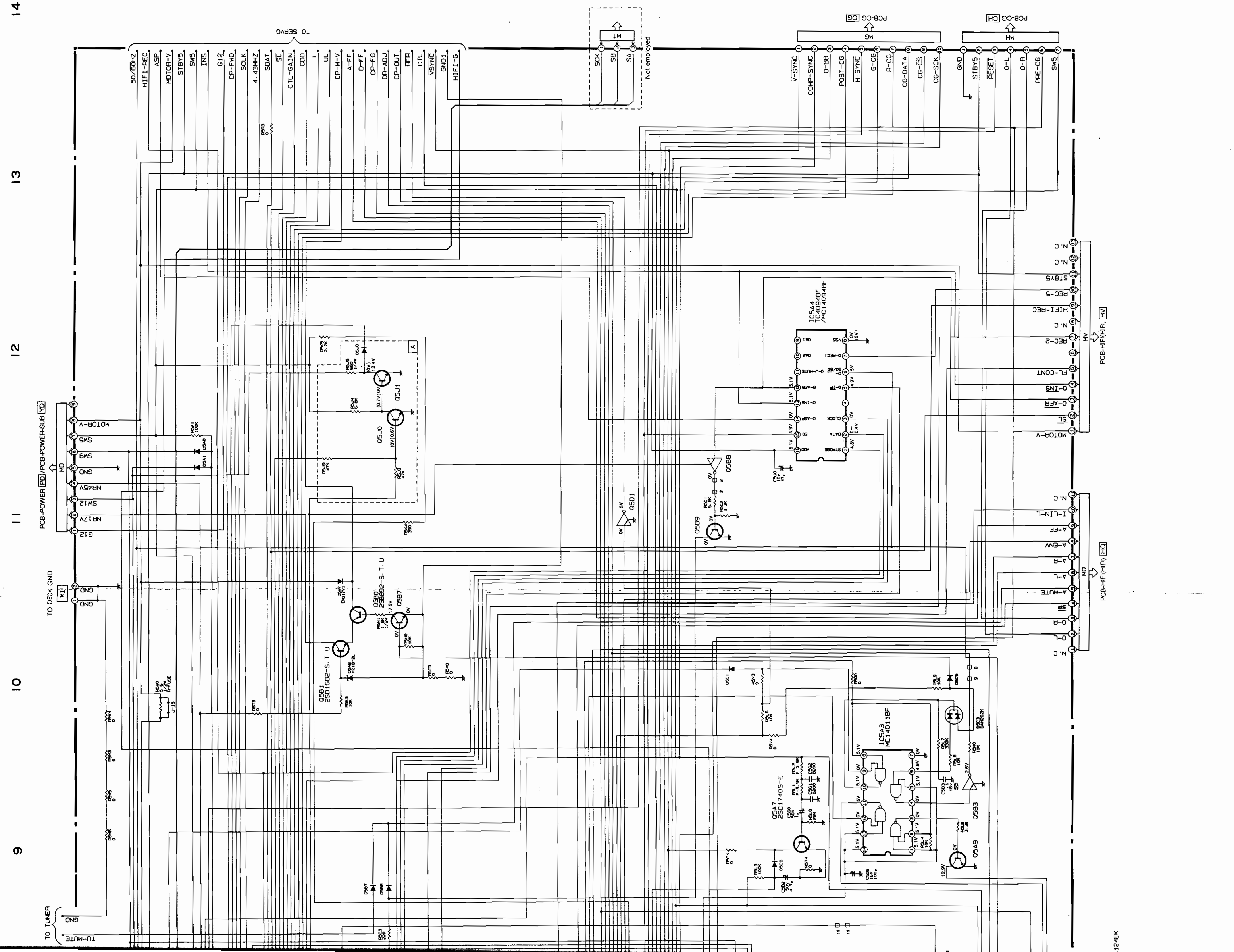
(MC) ○: Employed ×: Not' employed

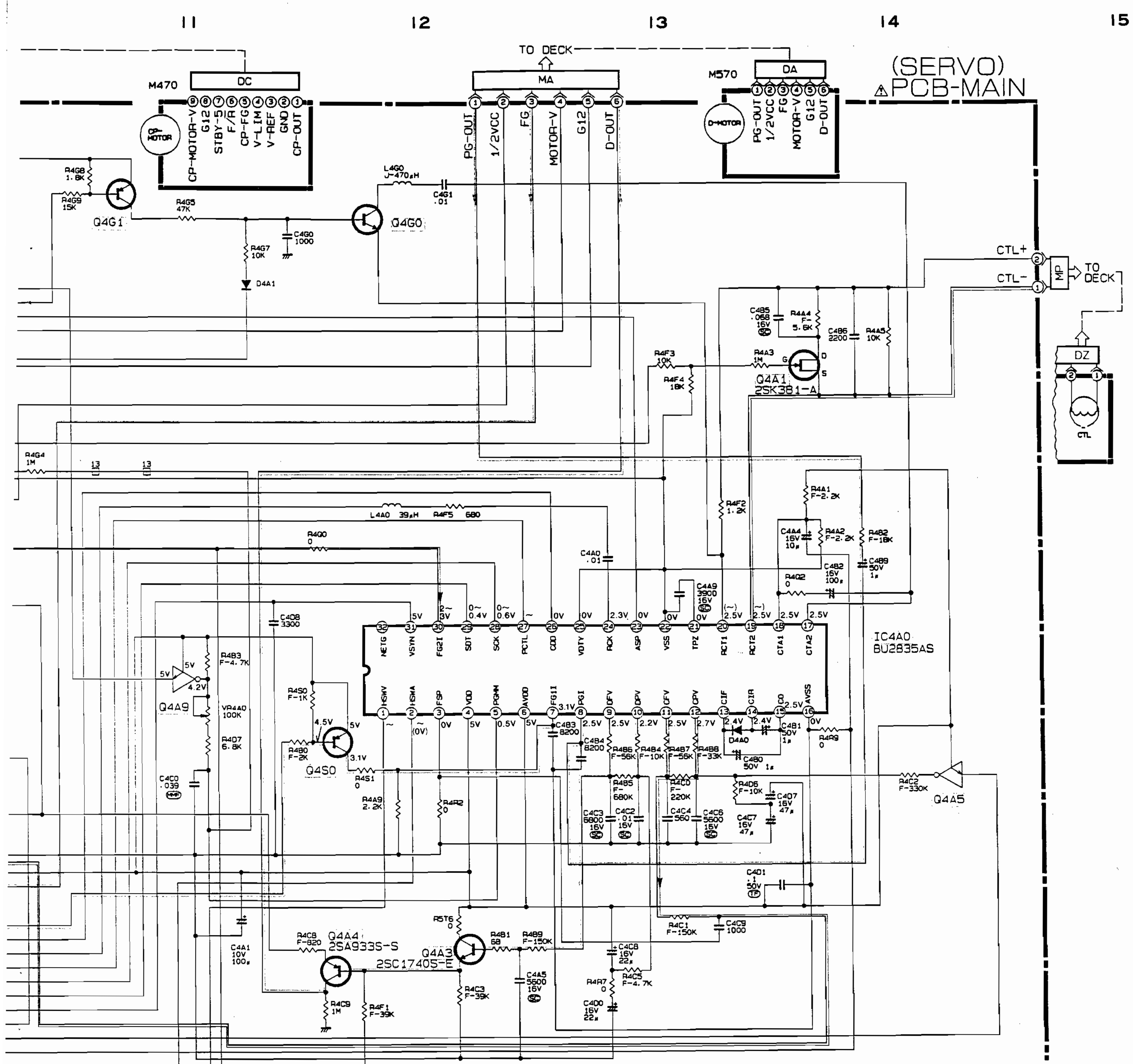
MODELS \ SYMBOL NO.	A AREA	R5J9	R5B7	R5A0	J15	R5X0	J1
HS-M59(Y)(E)(IR)	○	×	×	×	○	○	×
HS-M59(B)	○	×	×	○	×	×	○
HS-M59(G)	○	×	×	×	○	○	×
HS-M59(A)(NZ)	×	×	○	×	○	○	×

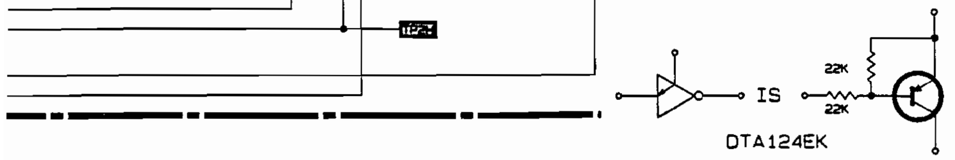
All diodes are 1SS252 unless otherwise sp
All NPN transistors are 2SC3052-E,F
unless otherwise specified.
All PNP transistors are 2SA1235-E,F
unless otherwise specified.


5
6
7
8
9
10
PCB-HIFI(HIFI) HU
MU
SS
FE-G
FE
TO Y/C
S
O-ANT
AFT-V
DOP
V-ENV
+30V
(RGB)
CONT12
IO-EDIT
ROT
SS-V-SYNC
POST-CG
R-CG
G-CG
50/60HZ
SP
REC-2
EE
STBY5
O-PB
SW12
SW9
SW5
AI-2
AI-1
4.43MHZ
PRE-CG
COMP-SYNC
NR45V
VIDEO-IN
IP-SW
IP-RP
O-EXT-L2
TO TUNER
TU-MUTE
GND
TO DECK GN
MI
GND
GND
IC5A0
M37424M8
-328SP
IC5A2
NJM2902
IC5A3
MC14011BF
Q5C0
Q5B5
Q5G3
Q5B1
2SD1682-S.T.U
Q5B0
2SB892-S
Q5B7
Q5B2
Q5A8
Q5D8
Q5G1
Q5D9
Q5G2
2SC3053
-C.D
Q5G7
Q5G8
Q5G9
Q5H0
Q5H4
Q5G5
Q5G6
Q5G4
Q5D7
Q5A6
Q5B4
Q5H2
Q5A5
Q5A7
2SC1740S-E
Q5A9
Q5B3
Q5C0
D5C8
DAN202K
D5H0
DAN202K
D5B4
DAN202K
D5C3
DAN202K
CF5A0
4.0MHZ
N.C
O-L
O-R
SP
A-MUTE
PCB-HIF
IS
DTC124EK
DTA124EK
22K

es are 1SS252 unless otherwise specified.
transistors are 2SC3052-E.F
therwise specified.
transistors are 2SA1235-E.F
therwise specified.

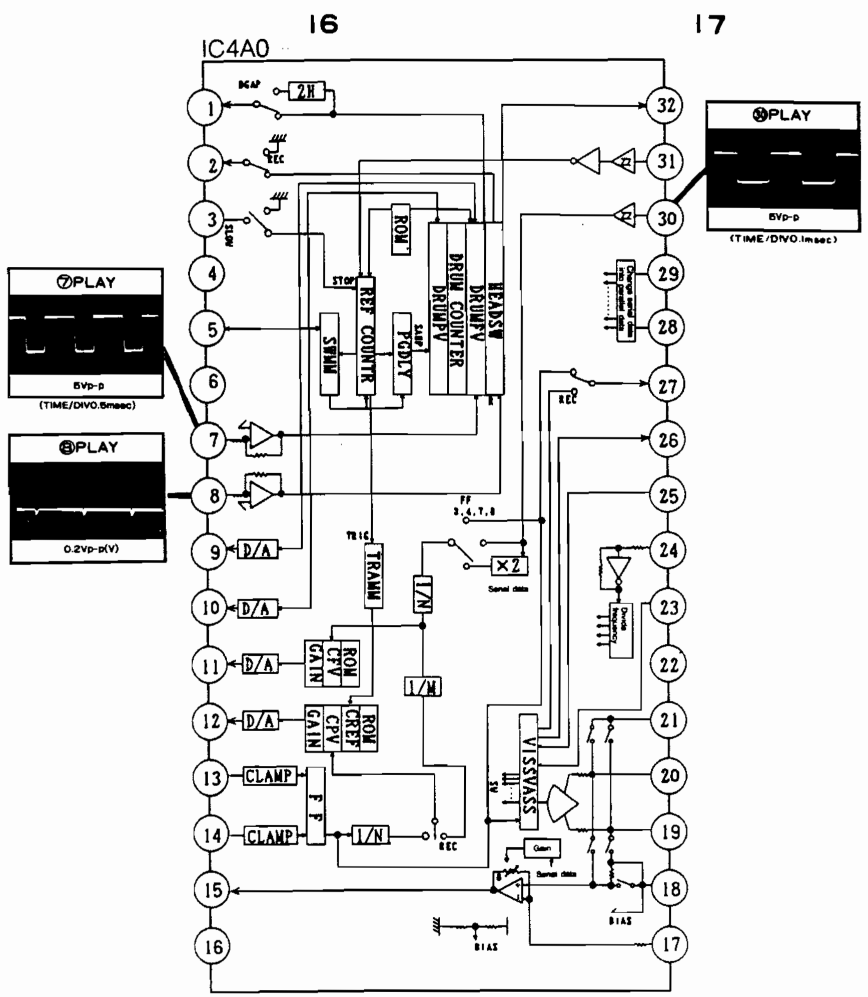

14
13
12
11
10
9
TO SERVO
50/60HZ
HIFI-REC
ASP
MOTOR-V
STBY5
SW5
INS
G12
CP-FWD
SCLK
4.43MHZ
SDAT
SL
CTL-GAIN
CDD
L
UL
CP-M-V
A-FF
D-FF
CP-FG
DR-ADJ
CP-OUT
AFR
CTL
VSYNC
GND1
HIFI-G
MT
SCK
SB
SA
Not employed
PCB-CG CG
MG
V-SYNC
COMP-SYNC
O-BB
POST-CG
H-SYNC
G-CG
R-CG
CG-DATA
CG-CS
CG-SCK
PCB-CG CH
MH
GND
STBY5
RESET
O-L
O-R
PRE-CG
SW5
PCB-HIFI(HIFI) HV
MV
N.C
N.C
STBY5
REC-5
HIFI-REC
N.C
REC-2
N.C
FL-CONT
O-INS
O-AFR
SL
MOTOR-V
PCB-HIFI(HIFI) HQ
MQ
N.C
I-LIN-L
A-FF
A-ENV
A-R
A-L
A-MUTE
SW
O-R
O-L
N.C
PCB-POWER PD/PCB-POWER-SUB YD
MD
MOTOR-V
SW5
SW9
GND
NR45V
SW12
NR17V
G12
TO DECK GND
MI
GND
GND
TO TUNER
GND
TU-MUTE
IC5A4
TC4094BF
/MC14094BF
IC5A3
MC14011BF
Q5A7
2SC1740S-E
Q5A9
Q583
Q589
Q588
Q501
Q5B1
2SD1682-S.T.U
Q5B0
2SB892-S.T.U
Q5B7
Q5J0
Q5J1
D5C3
DAN202K
A


11
12
13
14
15
(SERVO)
PCB-MAIN
M470
DC
CP-MOTOR-V
G12
STBY-5
F/R
CP-FG
V-LIM
V-REF
GND
CP-OUT
CP-MOTOR
TO DECK
MA
PG-OUT
1/2VCC
FG
MOTOR-V
G12
D-OUT
M570
DA
D-MOTOR
R4G8 1.8K
R4G9 15K
Q4G1
R4G5 47K
R4G7 10K
D4A1
C4G0 1000
L4G0 470μH
C4G1 .01
Q4G0
CTL+
CTL-
MP
TO DECK
DZ
CTL
C4B5 .068 16V
R4A4 F-5.6K
C4B6 2200
R4A5 10K
R4F3 10K
R4F4 18K
R4A3 1M
Q4A1 2SK381-A
R4G4 1M
L4A0 39μH
R4F5 680
R4G0 0
R4F2 1.2K
R4A1 F-2.2K
C4A4 16V 10μ
R4A2 F-2.2K
R4B2 F-18K
C4B2 16V 100μ
C4B9 50V 1μ
R4Q2 0
C4A0 .01
C4A9 3900 16V
C4Q8 3300
IC4A0 BU2835AS
NETG
VSYN
FG2I
SDT
SCK
PCTL
CDD
VDTY
RCK
ASP
VSS
TPZ
RCT1
RCT2
CTA1
CTA2
HSWV
HSWA
FSP
VDD
FGHM
AVDD
FG1I
PG1I
DFV
DPV
CFV
CPV
C1IF
C1R
C0
AVSS
R4B3 F-4.7K
Q4A9
VR4A0 100K
R4Q7 6.8K
C4C0 .039
R4S0 F-1K
R4B0 F-2K
Q4S0
R4S1 0
R4A9 2.2K
R4R2 0
C4B3 8200
C4B4 8200
R4B6 F-56K
R4B4 F-10K
R4B7 F-56K
R4B8 F-33K
D4A0
C4B0 50V 1μ
C4B1 50V 1μ
R4D6 F-10K
C4Q7 16V 47μ
R4B5 F-680K
R4C0 F-220K
C4C3 6800 16V
C4C2 .01 16V
C4C4 560
C4C6 5600 16V
C4C7 16V 47μ
R4A9 0
R4C2 F-330K
Q4A5
C4D1 .1 50V
R4C1 F-150K
C4C9 1000
R5T6 0
R4B1 68
R4B9 F-150K
C4C8 16V 22μ
R4C5 F-4.7K
R4R7 0
C4A5 5600 16V
C4D0 16V 22μ
C4A1 10V 100μ
R4C8 F-820
Q4A4 2SA933S-S
Q4A3 2SC1740S-E
R4C3 F-39K
R4C9 1M
R4F1 F-39K
TP2

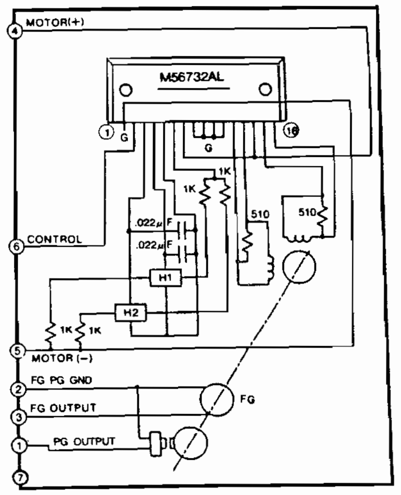

22K
22K
IS
DTA124EK

All diodes are 1SS252 unless otherwise specified.
All NPN transistors are 2SC3052-E·F unless otherwise specified.
All PNP transistors are 2SA1235-E·F unless otherwise specified.

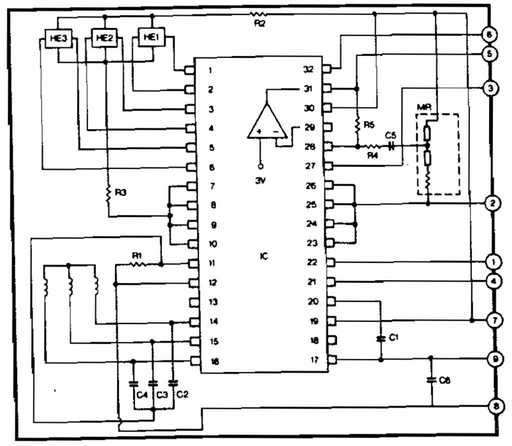
Drum Servo System
Capstan Servo System


16
17
IC4A0
⑦PLAY
5Vp-p
(TIME/DIV0.5msec)
⑧PLAY
0.2Vp-p(V)
㉚PLAY
5Vp-p
(TIME/DIV0.1msec)
2H
REC
ROM
REF COUNTR
PGDLY
DRUM COUNTER
DRUMPV
DRUMFV
HEADSW
SWMM
TRAMM
I/N
I/M
X2
D/A
D/A
D/A
D/A
ROM CFV GAIN
ROM CREF CPV GAIN
CLAMP
CLAMP
FF
I/N
V SSVASS
BIAS

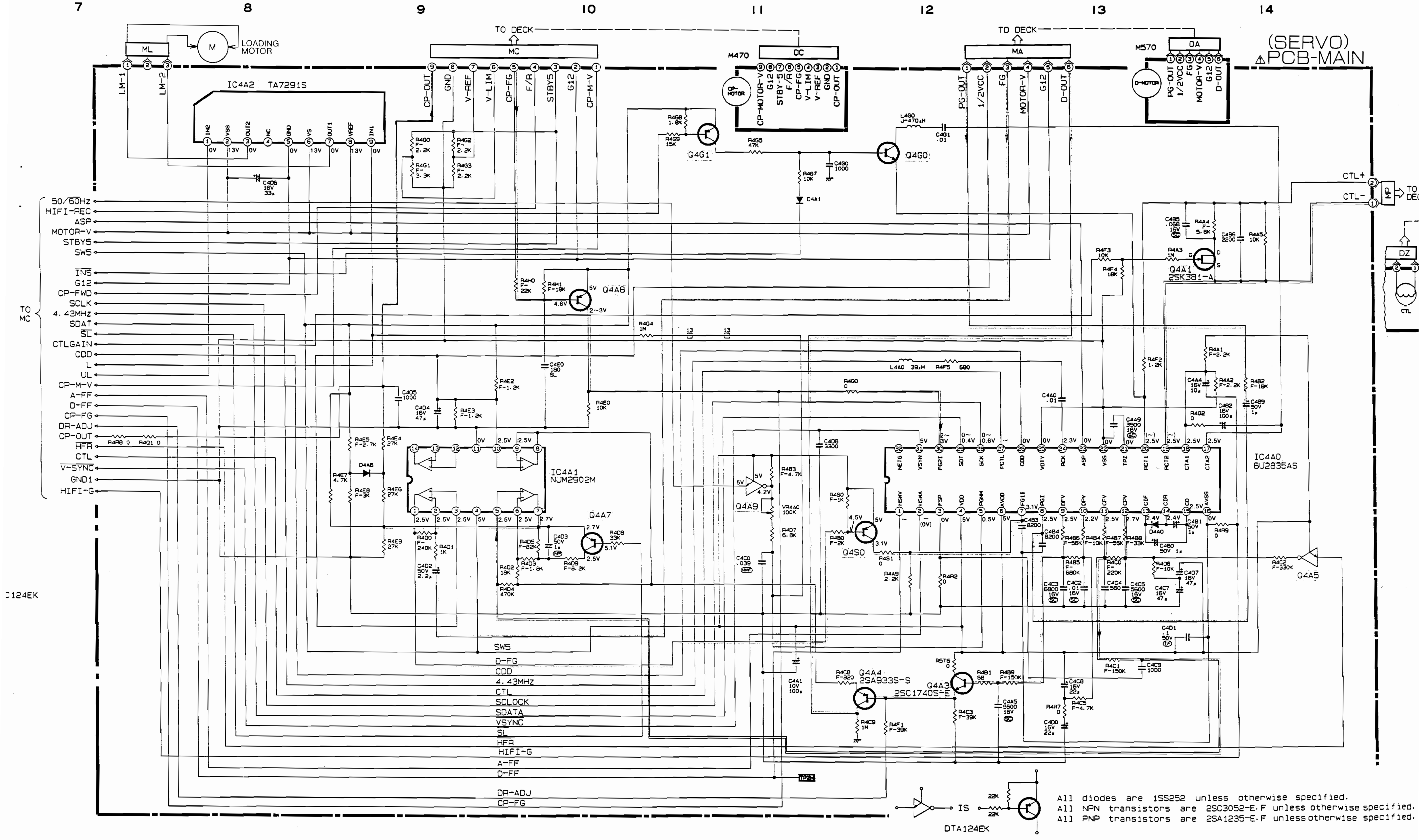
DRUM MOTOR


MOTOR(+)
M56732AL
CONTROL
MOTOR(-)
FG PG GND
FG OUTPUT
PG OUTPUT
FG
H1
H2
510
510
1K
1K

CAPSTAN MOTOR


HE3
HE2
HE1
R2
R3
R1
R4
R5
C5
MR
IC
3V
C1
C6
C4
C3
C2

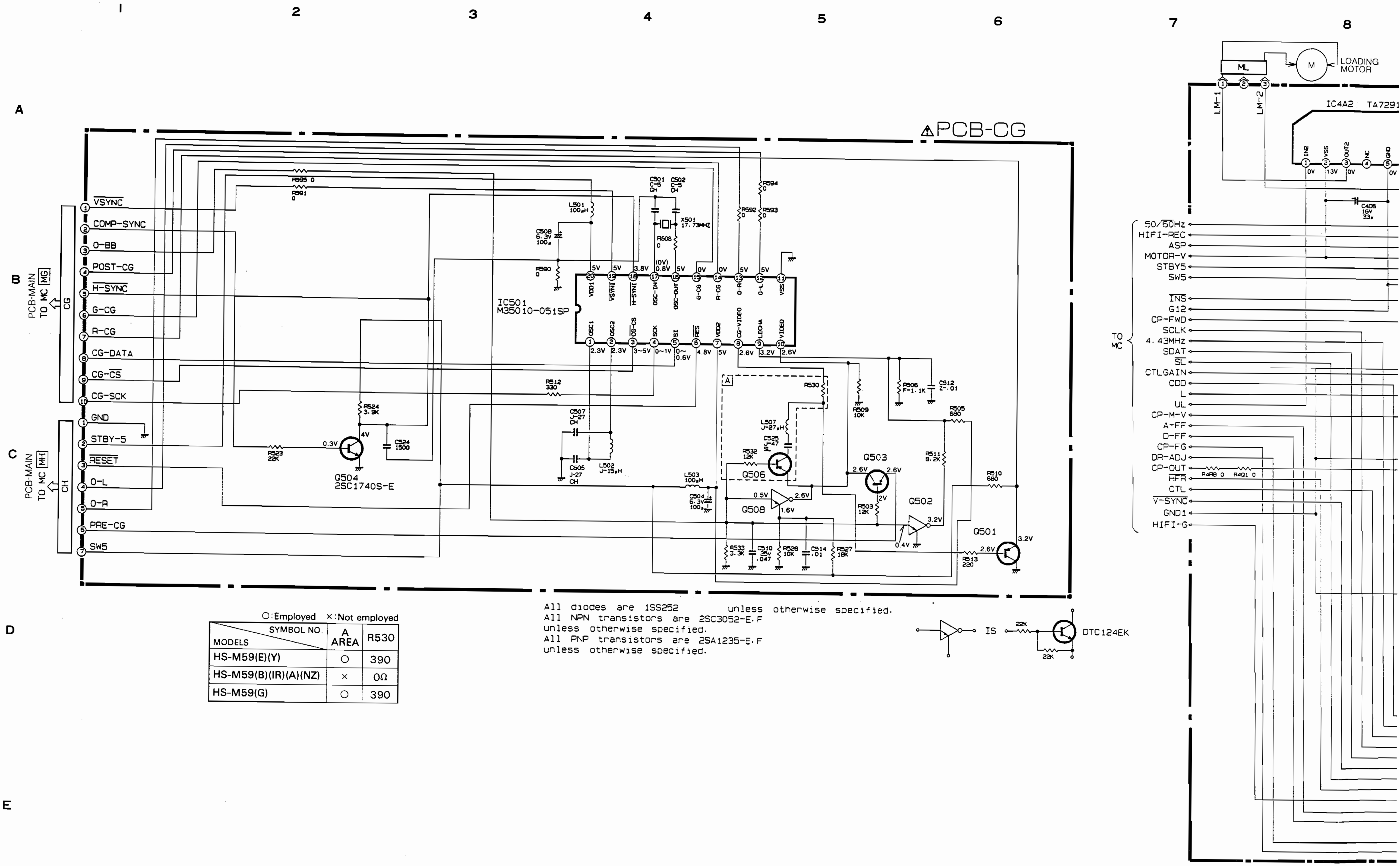
HS-M59(Y)(B)(IR)(E)
HS-M59(A)(NZ) (4/5)


7
8
9
10
11
12
13
14
(SERVO)
⚠PCB-MAIN
TO DECK
TO DECK
ML
LOADING MOTOR
M
LM-1
LM-2
MC
CP-OUT
GND
V-REF
V-LIM
CP-FG
F/R
STBY5
G12
CP-M-V
M470
DC
CP-MOTOR
CP-MOTOR-V
G12
STBY-5
F/R
CP-FG
V-LIM
V-REF
GND
CP-OUT
MA
PG-OUT
1/2VCC
FG
MOTOR-V
G12
D-OUT
M570
DA
D-MOTOR
PG-OUT
1/2VCC
FG
MOTOR-V
G12
D-OUT
IC4A2 TA7291S
IN2
VSS
OUT2
NC
GND
VS
OUT1
VREF
IN1
C406 16V 33μ
R4G0 F-2.2K
R4G1 F-3.3K
R4G2 F-2.2K
R4G3 F-2.2K
R4G8 1.8K
R4G9 15K
Q4G1
R4G5 47K
R4G7 10K
C4G0 1000
D4A1
L4G0 J-470μH
C4G1 .01
Q4G0
CTL+
CTL-
MP
TO DEC
DZ
CTL
C485 .068 16V
R4A4 F-5.6K
C486 2200
R4A5 10K
R4F3 10K
R4A3 1M
Q4A1 2SK381-A
R4F4 18K
TO MC
50/60Hz
HIFI-REC
ASP
MOTOR-V
STBY5
SW5
INS
G12
CP-FWD
SCLK
4.43MHz
SDAT
SL
CTLGAIN
CDD
L
UL
CP-M-V
A-FF
D-FF
CP-FG
DR-ADJ
CP-OUT
HFR
CTL
V-SYNC
GND1
HIFI-G
R4R8 0
R4Q1 0
R4H0 F-22K
R4H1 F-18K
Q4A8
R4G4 1M
C4E0 180 SL
R4E2 F-1.2K
C4D5 1000
C4D4 16V 47μ
R4E3 F-1.2K
R4E0 10K
R4E5 F-2.7K
R4E4 27K
R4E7 4.7K
D4A6
R4E8 F-3K
R4E6 27K
R4E9 27K
IC4A1 NJM2902M
R400 F-240K
R4D1 1K
C4D2 50V 2.2μ
R4D5 F-82K
C4D3 50V 1μ
R4D3 F-1.8K
R4D2 18K
R4D4 470K
R4D9 F-8.2K
Q4A7
R4D8 33K
L4A0 39μH
R4F5 680
R4Q0 0
C4D8 3300
R483 F-4.7K
Q4A9
VR440 100K
R4D7 6.8K
C4C0 .039
R4S0 F-1K
R480 F-2K
Q4S0
R4S1 0
R4A9 2.2K
R4R2 0
IC4A0 BU2835AS
METG
VSYN
FG2I
SDT
SCK
PCTL
CDD
VDTY
RCK
ASP
VSS
TPZ
RCT1
RCT2
CTA1
CTA2
MSHV
MSHA
FSP
VDD
PGMM
PGVDD
FG1I
PGI
DFV
DPV
CFV
CPV
CIF
CIR
CO
AVSS
C4A0 .01
C4A9 3900 16V
R4F2 1.2K
R4A1 F-2.2K
C4A4 16V 10μ
R4A2 F-2.2K
R4B2 F-18K
C4B2 16V 100μ
C4B9 50V 1μ
R4Q2 0
C4B3 8200
C4B4 8200
R4B6 F-56K
R4B4 F-10K
R4B7 F-56K
R4B8 F-33K
D4A0
C4B1 50V 1μ
C4B0 50V 1μ
R4B9 0
R4B5 F-680K
R4C0 F-220K
R4D6 F-10K
C4D7 16V 47μ
C4C3 6800 16V
C4C2 .01 16V
C4C4 560
C4C6 5600 16V
C4C7 16V 47μ
R4C2 F-330K
Q4A5
C4D1 .1 50V
SW5
D-FG
CDD
4.43MHz
CTL
SCLOCK
SDATA
VSYNC
SL
HFR
HIFI-G
A-FF
D-FF
DR-ADJ
CP-FG
TP2
C4A1 10V 100μ
R4C8 F-820
Q4A4 2SA933S-S
R4C9 1M
R4F1 F-39K
R5T6 0
Q4A3 2SC1740S-E
R4B1 68
R4B9 F-150K
R4C3 F-39K
C4A5 5600 16V
R4C1 F-150K
C4C9 1000
C4C8 16V 22μ
R4C5 F-4.7K
R4R7 0
C4D0 16V 22μ
IS
22K
22K
DTA124EK
DTA124EK

All diodes are 1SS252 unless otherwise specified.
All NPN transistors are 2SC3052-E·F unless otherwise specified.
All PNP transistors are 2SA1235-E·F unless otherwise specified.

Drum Servo System

Capstan Servo System


1
2
3
4
5
6
7
8
A
B
C
D
E
ML
M
LOADING MOTOR
LM-1
LM-2
IC4A2 TA7291
IN2
VSS
OUT2
NC
GND
0V
13V
0V
0V
C4O6 16V 33μ
⚠PCB-CG
PCB-MAIN TO MC MG
CG
PCB-MAIN TO MC MH
CH
VSYNC
COMP-SYNC
O-BB
POST-CG
H-SYNC
G-CG
R-CG
CG-DATA
CG-CS
CG-SCK
GND
STBY-5
RESET
O-L
O-R
PRE-CG
SW5
R595 0
R591 0
L501 100μH
C501 CH
C502 CH
R594 0
R592 0
R593 0
X501 17.73MHz
R508 0
C508 6.3V 100μ
R590 0
IC501
M35010-051SP
VDD1
VSYNI
H-SYNI
OSC-IN
OSC-OUT
G-CG
R-CG
O-R
O-L
VSS
OSC1
OSC2
CG-CS
SCK
SI
RES
VDD2
CG-VIDEO
LECHA
VIDEO
5V
3.8V
(0V) 0.8V
0V
2.3V
3~5V
0~1V
0~0.6V
4.8V
2.6V
3.2V
R512 330
C507 J-27
C505 J-27 CH
L502 J-15μH
R524 3.9K
C524 1500
R523 22K
0.3V
4V
Q504
2SC1740S-E
R530
L507 J-27μH
C525 J-47
R532 12K
Q506
R509 10K
R506 F-1.1K
C512 Z-.01
R505 680
R511 8.2K
Q503
L503 100μH
C504 6.3V 100μ
Q508
0.5V
1.6V
R503 12K
2V
Q502
0.4V
R510 680
Q501
R513 220
R533 3.3K
C510 25V .047
R528 10K
C514 .01
R527 18K
TO MC
50/60Hz
HIFI-REC
ASP
MOTOR-V
STBY5
SW5
INS
G12
CP-FWD
SCLK
4.43MHz
SDAT
SL
CTLGAIN
CDD
L
UL
CP-M-V
A-FF
D-FF
CP-FG
DR-ADJ
CP-OUT
HFR
CTL
V-SYNC
GND1
HIFI-G
R4R8 0
R4Q1 0
IS
22K
DTC124EK

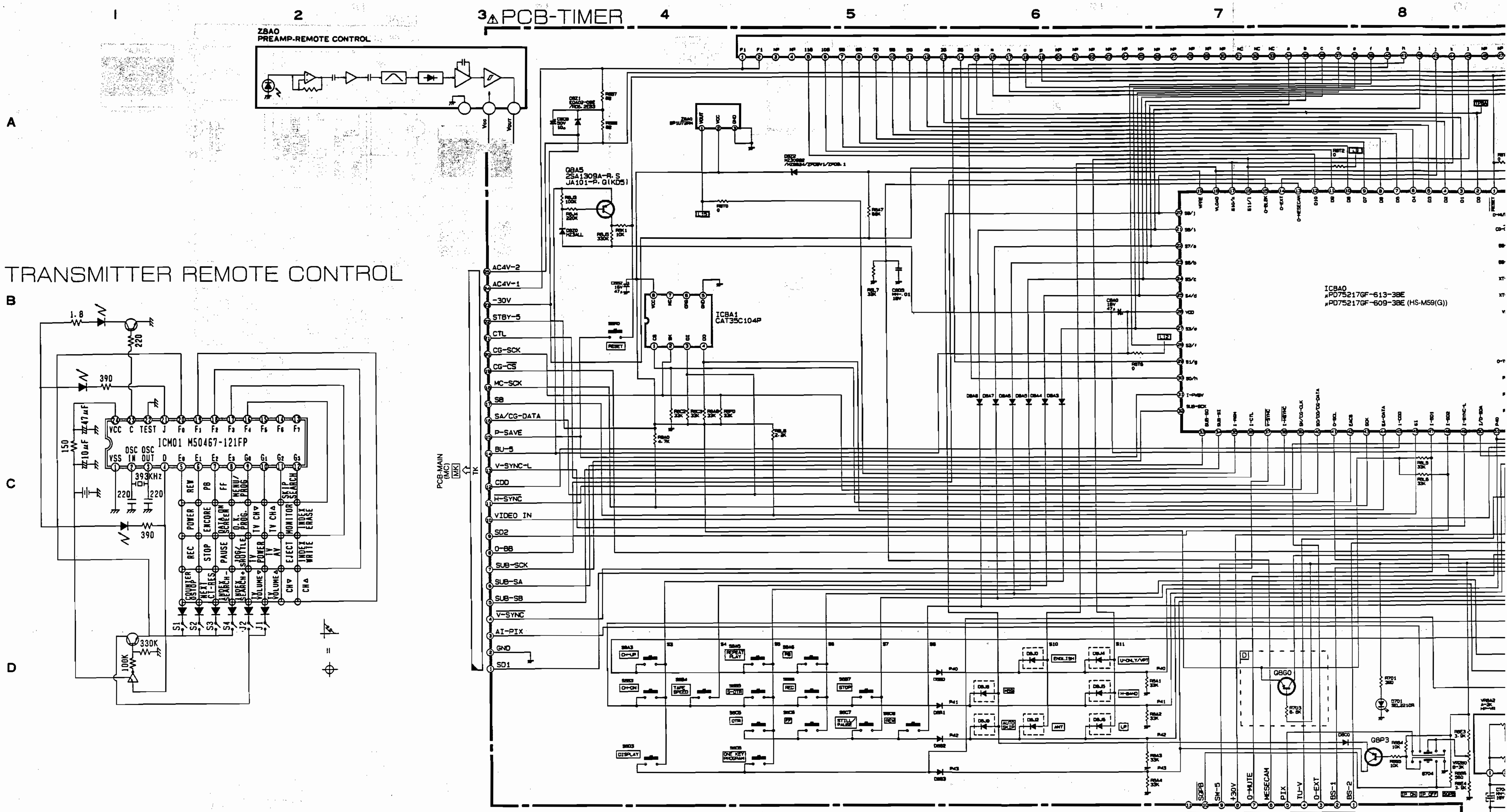
All diodes are 1SS252 unless otherwise specified.
All NPN transistors are 2SC3052-E·F unless otherwise specified.
All PNP transistors are 2SA1235-E·F unless otherwise specified.

○:Employed ×:Not employed

SYMBOL NO. MODELS	A AREA	R530
HS-M59(E)(Y)	○	390
HS-M59(B)(IR)(A)(NZ)	×	0Ω
HS-M59(G)	○	390

TRANSMITTER REMOTE CONTROL

3 ⚠ PCB-TIMER


1
2
3
4
5
6
7
8
A
B
C
D
E
ZBA0
PREAMP-REMOTE CONTROL
Vcc
Vout
QBA5
2SA1309A-R, S
JA101-P, Q(KD5)
ICBA1
CAT35C104P
ICBA0
μPD75217GF-613-3BE
μPD75217GF-609-3BE (HS-M59(G))
ICM01 M50467-121FP
VCC C TEST J F0 F1 F2 F3 F4 F5 F6 F7
VSS OSC IN OSC OUT I CM E0 E1 E2 E3 G0 G1 G2 G3
393KHz
1.8
220
390
47μF
10μF
150
330K
100K
REW
PB
FF
MENU/PROG
SKIP SEARCH
POWER
ENCORE
DATA ON SCREEN
O.K. PROG.
TV CH▽
TV CH△
MONITOR
INDEX ERASE
REC
STOP
PAUSE
JOG/SHUTTLE
TV POWER
TV AV
EJECT
INDEX WRITE
COUNTER RESET
NEXT
INDEX SEARCH−
INDEX SEARCH+
VOLUME▽
VOLUME△
CH▽
CH△
S1
S2
S3
S4
J2
J1
AC4V-2
AC4V-1
-30V
STBY-5
CTL
CG-SCK
CG-CS
MC-SCK
SB
SA/CG-DATA
P-SAVE
BU-5
V-SYNC-L
CDD
H-SYNC
VIDEO IN
SD2
O-BB
SUB-SCK
SUB-SA
SUB-SB
V-SYNC
AI-PIX
GND
SD1
PCB-MAIN (MC)
MK
TK
RESET
DISPLAY
ONE KEY PROGRAM
ENGLISH
U-ONLY/VPT
H-BAND
ANT
UP
AUTO SKIP
STILL/PAUSE
REPEAT PLAY
TAPE SPEED
CH-DN
CH-UP
D
Q8G0
R703
D701 SEL2210R
R701 390
Q8P3
SOPB
SW-5
+30V
O-MUTE
MESECAM
PIX
TU-V
O-EXT
BS-1
BS-2

TF
⇩
MF
PCB-MAIN
(Y/C)

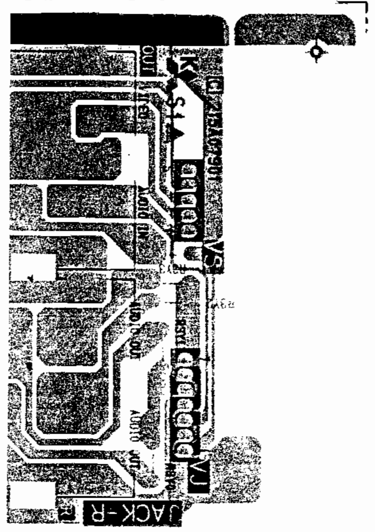
All PNP transistor are 2S
unless otherwise specifie
All diodes are 1SS252
unless otherwise specifi

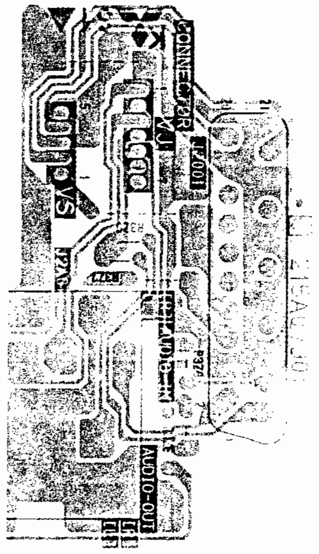
○ : Employed
× : Not' employed

SYMBOL NO. / MODELS	D8J0	D8J2	D8J4	D8J5	R8G0	R7D4	D AREA	S705	S8D6	D8J9	R8S0	R8S1	E AREA	D701	D8G0	Q8P4
HS-M59(Y)	×	×	×	×	390	○	×	×	×	○	○	×	×	SEL2210R	SEL2410E	×
HS-M59(B)	○	×	○	×	220	×	○	○	×	×	×	○	×	GL3HD44	GL3HD44	○
HS-M59(G)	×	×	○	×	390	○	×	×	×	○	○	×	○	SEL2210R	SEL2410E	×
HS-M59(IR)	○	×	×	×	390	○	×	○	×	×	×	○	×	SEL2210R	SEL2410E	○
HS-M59(E)	×	×	×	○	390	○	×	○	×	×	×	○	×	SEL2210R	SEL2410E	○
HS-M59(A)	×	○	×	×	390	○	×	×	○	×	○	×	×	SEL2210R	SEL2410E	×
HS-M59(NZ)	×	○	×	×	390	○	×	○	○	×	×	○	×	SEL2210R	SEL2410E	○

7

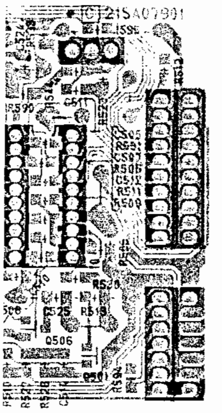
CB-JACK





-CONNECTOR

PCB-CG



PCB-MAIN(SOLDER SIDE)

SYMBOL NO.	ADDRESS
C1N1	A – 2
C2C1	A – 3
C2C2	A – 3
C2C3	A – 3
C2C4	B – 3
C2C5	A – 3
C2C8	A – 3
C2C9	A – 3
C2D1	A – 3
C2D2	A – 3
C2D4	A – 5
C2D7	A – 5
C2E0	A – 5
C2E1	A – 5
C2E3	B – 5
C2E4	B – 5
C2F4	B – 5
C2F5	B – 5
C2F7	A – 5
C2G4	B – 4
C2G5	B – 4
C2G7	A – 5
C2H0	A – 6
C2H1	A – 6
C2H2	A – 6
C2H3	B – 6
C2H7	A – 5
C2J5	C – 1
C2J9	A – 1
C2P2	A – 6
C2P3	A – 6
C2P5	A – 1
C2P8	B – 3
C2R0	A – 5
C2R1	A – 5
C2R2	B – 5
C2R3	B – 5
C2R4	A – 3
C2R5	B – 4
C2X4	A – 5
C2X9	A – 4
C4B3	C – 2
C4B4	C – 2
C4B6	C – 2
C4C4	C – 3
C4C9	C – 3
C4D5	C – 3
C4D8	C – 3
C4E0	D – 3
C4G0	C – 2
C4G1	C – 2
C501	D – 6
C502	D – 6
C505	E – 6
C507	E – 6
C510	E – 6
C511	D – 6
C512	E – 6
C514	E – 6
C524	D – 6
C525	E – 6
C5A0	C – 4
C5A1	B – 4
C5A3	C – 5
C5A4	B – 3
C5A5	B – 2
C5A6	B – 2
C5A7	B – 3
C5B0	B – 3
C5E0	C – 5
C5E1	C – 5
C5F8	C – 5
C5F9	C – 5
C5G1	C – 2
C5G2	C – 2
C5H1	C – 6
C5U1	C – 5
C653	A – 3
C656	A – 4
C659	A – 4
C660	A – 4
C661	A – 4
C662	A – 4
C663	A – 4
C664	A – 4
D5B4	B – 3
D5C3	C – 5
D5C8	C – 6
D5H0	C – 6
D901	E – 5
D902	D – 5
D903	E – 5
D904	E – 5
D905	E – 5
D906	E – 5
D907	E – 5
D908	E – 5
D913	E – 4
D914	E – 4
D915	E – 5
D916	E – 5
D917	E – 5
D9A0	D – 1
F901	D – 2
F902	D – 4
F903	D – 5
IC2A0	B – 5
IC2A1	A – 5
IC2A2	A – 1
IC2A3	A – 1
IC2A4	A – 1
IC4A0	C – 2
IC4A1	C – 3
IC4A2	D – 3
IC501	E – 6
IC5A0	C – 4
IC5A2	D – 6
IC5A3	C – 5
IC5A4	C – 4
IC651	A – 4
IC9A0	E – 2
Q2B1	A – 3
Q2B2	A – 3
Q2B5	A – 3
Q2B6	B – 3
Q2B8	B – 3
Q2B9	A – 3
Q2C3	A – 5
Q2C4	B – 5
Q2C5	B – 5
Q2C6	B – 6
Q2C7	B – 6
Q2C8	B – 5
Q2C9	B – 4
Q2D0	B – 4
Q2D1	B – 4
Q2D4	B – 6
Q2D5	A – 6
Q2D8	A – 1
Q2E3	B – 5
Q2E5	A – 1
Q2E6	D – 3
Q2P0	A – 5
Q2P1	A – 6
Q2P2	A – 6
Q2P3	A – 4
Q2P4	B – 4
Q2P5	A – 5
Q2P6	A – 5
Q2P7	A – 5
Q2R0	A – 3
Q2R1	A – 3
Q2S1	B – 3
Q2S3	B – 6
Q2X0	A – 5
Q2X1	A – 2
Q2X2	A – 3
Q2X4	A – 5
Q2X5	A – 5
Q4A5	C – 3
Q4A7	C – 3
Q4A8	C – 3
Q4A9	C – 3
Q4G0	C – 2
Q4S0	C – 3
Q501	E – 6
Q502	E – 6
Q503	E – 6
Q506	E – 6
Q508	E – 6
Q5A0	C – 4
Q5A1	C – 5
Q5A2	C – 5
Q5A3	C – 5
Q5A4	D – 4
Q5A5	C – 4
Q5A6	B – 4
Q5A8	C – 6
Q5A9	B – 5
Q5B2	B – 2
Q5B3	B – 5
Q5B4	B – 4
Q5B5	B – 2
Q5B7	C – 2
Q5B8	C – 4
Q5B9	B – 1
Q5C0	B – 5
Q5C3	C – 5
Q5D1	C – 5
Q5D7	A – 2
Q5D8	A – 2
Q5D9	A – 2
Q5G0	B – 2
Q5G1	B – 2
Q5G2	B – 2
Q5G3	B – 4
Q5G4	A – 2
Q5G5	A – 2
Q5G6	A – 2
Q5G7	B – 3
Q5G8	A – 3
Q5G9	A – 3
Q5H0	D – 5
Q5H2	B – 2
Q5H4	B – 2
Q5J0	C – 1
Q5J1	C – 1
Q5J2	C – 1
Q5J3	C – 1
Q5J4	C – 1
Q5J5	C – 1
Q5J6	C – 1
Q5J7	C – 1
Q901	E – 5
Q902	E – 5
Q903	E – 4
Q9A0	E – 1
Q9A1	E – 1
Q9A2	E – 1
Q9A3	D – 1
Q9A4	E – 2
R1M0	B – 1
R1N0	A – 2
R1N1	A – 2
R1N2	A – 2
R1N3	A – 3
R1N4	A – 2
R1N5	A – 2
R1N7	A – 2
R1N8	A – 2
R201	A – 5
R203	A – 5
R204	B – 6
R205	B – 5
R206	A – 5
R207	A – 3
R208	B – 4
R210	A – 1
R211	A – 4
R212	A – 4
R213	A – 4
R214	A – 3
R215	B – 1
R216	B – 1
R217	B – 1
R218	A – 5
R219	A – 3
R220	B – 3
R221	B – 1
R222	A – 3
R223	A – 3
R224	A – 3
R225	A – 3
R226	B – 1
R2D2	A – 3
R2D3	B – 3
R2D4	A – 3
R2D5	A – 3
R2D6	A – 3
R2D7	A – 3
R2D8	A – 3
R2D9	B – 4
R2E1	A – 3
R2E2	A – 3
R2E3	A – 3
R2E5	B – 3
R2E6	B – 3
R2E7	B – 3
R2E8	B – 3
R2E9	D – 3
R2F0	D – 3
R2F1	A – 3
R2F2	B – 3
R2F3	B – 3
R2F4	B – 3
R2F5	A – 3
R2F6	A – 3
R2F7	A – 3
R2F8	A – 5
R2G0	A – 5
R2G1	A – 5
R2G2	A – 5
R2G3	A – 5
R2G4	B – 4
R2G7	A – 5
R2G8	B – 5
R2G9	B – 5
R2H1	B – 5
R2H2	B – 4
R2H4	B – 3
R2H5	B – 4
R2H6	B – 4
R2H7	B – 4
R2H9	B – 4
R2J2	B – 4
R2J3	B – 4
R2J4	A – 5
R2J5	A – 6
R2J6	B – 6
R2J7	B – 5
R2J8	A – 4
R2J9	A – 4
R2K1	A – 5
R2K4	B – 1
R2K7	B – 1
R2L3	A – 1
R2L5	A – 1
R2L6	A – 1
R2L7	C – 1
R2L9	A – 1
R2M0	A – 1
R2M2	A – 1
R2M3	A – 1
R2N5	B – 6
R2N6	B – 6
R2P2	A – 6
R2P3	A – 6
R2P4	A – 6
R2P5	A – 6
R2P6	A – 6
R2P7	A – 3
R2P9	B – 5
R2R2	B – 5
R2R5	B – 4
R2R7	A – 3
R2R9	B – 4
R2S5	A – 6
R2S6	A – 5
R2S9	A – 1
R2T1	A – 5
R2T3	B – 5
R2T4	B – 5
R2T5	B – 6
R2T6	B – 5
R2T7	B – 6
R2X0	A – 5
R2X1	B – 3
R2X4	A – 5
R2X5	A – 5
R4A1	C – 3
R4A2	C – 2
R4A3	C – 2
R4A4	C – 2
R4A5	C – 2
R4A9	C – 2
R4B1	C – 3
R4B2	C – 2
R4B3	B – 3
R4B4	C – 2
R4B5	C – 2
R4B5	C – 2
R4B6	C – 2
R4B7	C – 2
R4B8	C – 2
R4B9	C – 3
R4C0	C – 3
R4C1	C – 2
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R4C3	C – 3
R4C5	C – 3
R4C8	C – 3
R4C9	C – 3
R4D0	C – 3
R4D1	C – 3
R4D2	B – 3
R4D3	C – 3
R4D4	B – 3
R4D5	C – 3
R4D6	C – 3
R4D7	C – 3
R4D9	B – 3
R4E0	C – 3
R4E2	C – 3
R4E3	C – 3
R4E4	C – 3
R4E5	C – 3
R4E6	C – 3
R4E7	C – 3
R4E8	C – 3
R4E9	C – 3
R4F2	C – 2
R4F3	C – 2
R4F4	C – 2
R4G0	D – 3
R4G1	D – 3
R4G2	D – 3
R4G3	D – 3
R4G5	D – 2
R4H0	D – 3
R4H1	C – 3
R4Q0	C – 3
R4Q1	D – 3
R4Q2	C – 2
R4R2	C – 3
R4R7	C – 3
R4R8	D – 3
R4R9	C – 2
R4S0	C – 3
R4S1	C – 3
R503	E – 6
R505	E – 6
R506	E – 6
R508	E – 6
R509	E – 6
R510	E – 6
R511	E – 6
R512	D – 6
R513	E – 6
R523	D – 6
R527	E – 6
R528	E – 6
R530	E – 6
R532	E – 6
R533	D – 6
R544	D – 6
R590	D – 6
R591	E – 6
R592	E – 6
R593	E – 6
R594	E – 7
R595	D – 6
R5A3	C – 4
R5A4	D – 4
R5A5	D – 4
R5A6	C – 5
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R5A8	C – 5
R5A9	C – 5
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R5B6	B – 4
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R5B8	C – 5
R5C1	B – 2
R5C2	B – 1
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R5C5	D – 5
R5C6	D – 5
R5C7	C – 5
R5C8	B – 4
R5D0	C – 4
R5D1	C – 4
R5D2	C – 4
R5D3	B – 4
R5D4	C – 4
R5D6	C – 5
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R5E3	B – 3
R5E4	B – 3
R5E4	B – 3
R5E5	B – 2
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R5E7	B – 2
R5E8	A – 2
R5E9	B – 2
R5F0	B – 3
R5F1	B – 3
R5F2	B – 2
R5F4	B – 2
R5F5	D – 6
R5F6	D – 6
R5F7	D – 6
R5F8	D – 6
R5F9	C – 6
R5G0	C – 4
R5G1	D – 4
R5G2	D – 4
R5G3	C – 4
R5G4	B – 4
R5G6	A – 3
R5H0	C – 6
R5H3	C – 6
R5H4	C – 6
R5H5	C – 6
R5H6	C – 6
R5H7	C – 5
R5H8	D – 6
R5H9	D – 6
R5J0	C – 5
R5J1	C – 4
R5J2	B – 2
R5J3	C – 1
R5J4	C – 1
R5J7	C – 1
R5J8	C – 1
R5J9	C – 1
R5K1	B – 2
R5K4	D – 1
R5K5	C – 1
R5K7	C – 1
R5K8	C – 1
R5L0	C – 2
R5L1	C – 2
R5L2	C – 2
R5L3	B – 2
R5L4	C – 5
R5L5	B – 5
R5L6	C – 5
R5L7	C – 5
R5L8	C – 4
R5M1	C – 2
R5M2	C – 5
R5M3	C – 4
R5M4	C – 5
R5M5	C – 4
R5M6	C – 5
R5M7	D – 5
R5N0	C – 2
R5N2	B – 5
R5N3	B – 5
R5N8	B – 4
R5P0	B – 6
R5P2	C – 6
R5P3	C – 6
R5P4	C – 6
R5P5	B – 5
R5P7	A – 2
R5P8	A – 3
R5Q0	C – 5
R5Q2	B – 6
R5Q3	C – 4
R5Q4	C – 4
R5Q5	B – 4
R5Q6	B – 4
R5Q8	B – 3
R5R1	B – 4
R5R3	C – 3
R5R4	B – 2
R5S0	D – 5
R5S2	C – 5
R5S4	A – 2
R5S6	B – 4
R5S7	A – 2
R5T0	C – 6
R5T2	B – 2
R5T3	C – 2
R5T4	B – 2
R5T5	C – 2
R5T6	C – 3
R5T7	D – 5
R5U0	C – 5
R5U1	C – 5
R5U2	C – 5
R5U3	C – 5
R5U4	C – 5
R5U7	A – 2
R5U8	A – 2
R5U9	A – 2
R5V0	A – 2
R5V1	B – 2
R5V3	C – 5
R5V4	C – 5
R5V5	C – 5
R5V8	C – 2
R5W1	A – 2
R5W2	A – 2
R5W4	A – 2
R5W5	A – 2
R5W6	A – 2
R5W9	A – 2
R651	A – 3
R652	A – 3
R653	A – 3
R654	A – 4
R655	A – 3
R656	A – 4
R657	A – 4
R658	A – 4
R662	A – 4
T901	E – 3
TP2A	B – 3
TP2D	A – 5
TP2E	A – 5
TP2H	C – 4
TP2J	B – 1
TP2M	A – 4
TP2R	C – 4
TP2S	B – 4
TP5A	D – 5
TP5B	B – 6
TP5C	C – 5
TP6A	A – 4
TP6B	A – 3
TPGND	A – 5
TPG	A – 4
VR2A0	A – 5
VR2A1	A – 4
VR2A2	A – 4

SYMBOL NO.	AD
VR2A3	
VR2A5	
VR652	

RESS
- 4
- 6
- 5
- 2
- 5
- 4
- 2
- 2
- 4
- 1
- 5
- 5
- 5
- 2
- 2
- 2
- 2
- 2
- 2
- 4
- 2
- 2
- 2
- 3
- 3
- 3
- 5
- 2
- 2
- 1
- 1
- 1
- 1
- 1
- 1
- 1
- 1
- 5
- 5
- 4
- 1
- 1
- 1
- 1
- 2
- 1
- 2
- 2
- 2
- 3
- 2
- 2
- 2
- 2
- 5
- 5
- 6
- 5
- 5

SYMBOL NO.	ADDRESS
R207	A - 3
R208	B - 4
R210	A - 1
R211	A - 4
R212	A - 4
R213	A - 4
R214	A - 3
R215	B - 1
R216	B - 1
R217	B - 1
R218	A - 5
R219	A - 3
R220	B - 3
R221	B - 1
R222	A - 3
R223	A - 3
R224	A - 3
R225	A - 3
R226	B - 1
R2D2	A - 3
R2D3	B - 3
R2D4	A - 3
R2D5	A - 3
R2D6	A - 3
R2D7	A - 3
R2D8	A - 3
R2D9	B - 4
R2E1	A - 3
R2E2	A - 3
R2E3	A - 3
R2E5	B - 3
R2E6	B - 3
R2E7	B - 3
R2E8	B - 3
R2E9	D - 3
R2F0	D - 3
R2F1	A - 3
R2F2	B - 3
R2F3	B - 3
R2F4	B - 3
R2F5	A - 3
R2F6	A - 3
R2F7	A - 3
R2F8	A - 5
R2G0	A - 5
R2G1	A - 5
R2G2	A - 5
R2G3	A - 5
R2G4	B - 4
R2G7	A - 5
R2G8	B - 5
R2G9	B - 5
R2H1	B - 5
R2H2	B - 4
R2H4	B - 3
R2H5	B - 4
R2H6	B - 4
R2H7	B - 4
R2H9	B - 4
R2J2	B - 4

SYMBOL NO.	ADDRESS
R2J3	B - 4
R2J4	A - 5
R2J5	A - 6
R2J6	B - 6
R2J7	B - 5
R2J8	A - 4
R2J9	A - 4
R2K1	A - 5
R2K4	B - 1
R2K7	B - 1
R2L3	A - 1
R2L5	A - 1
R2L6	A - 1
R2L7	C - 1
R2L9	A - 1
R2M0	A - 1
R2M2	A - 1
R2M3	A - 1
R2N5	B - 6
R2N6	B - 6
R2P2	A - 6
R2P3	A - 6
R2P4	A - 6
R2P5	A - 6
R2P6	A - 6
R2P7	A - 3
R2P9	B - 5
R2R2	B - 5
R2R5	B - 4
R2R7	A - 3
R2R9	B - 4
R2S5	A - 6
R2S6	A - 5
R2S9	A - 1
R2T1	A - 5
R2T3	B - 5
R2T4	B - 5
R2T5	B - 6
R2T6	B - 5
R2T7	B - 6
R2X0	A - 5
R2X1	B - 3
R2X4	A - 5
R2X5	A - 5
R4A1	C - 3
R4A2	C - 2
R4A3	C - 2
R4A4	C - 2
R4A5	C - 2
R4A9	C - 2
R4B1	C - 3
R4B2	C - 2
R4B3	B - 3
R4B4	C - 2
R4B5	C - 2
R4B5	C - 2
R4B6	C - 2
R4B7	C - 2
R4B8	C - 2
R4B9	C - 3

SYMBOL NO.	ADDRESS
R4C0	C - 3
R4C1	C - 2
R4C2	C - 3
R4C3	C - 3
R4C5	C - 3
R4C8	C - 3
R4C9	C - 3
R4D0	C - 3
R4D1	C - 3
R4D2	B - 3
R4D3	C - 3
R4D4	B - 3
R4D5	C - 3
R4D6	C - 3
R4D7	C - 3
R4D9	B - 3
R4E0	C - 3
R4E2	C - 3
R4E3	C - 3
R4E4	C - 3
R4E5	C - 3
R4E6	C - 3
R4E7	C - 3
R4E8	C - 3
R4E9	C - 3
R4F2	C - 2
R4F3	C - 2
R4F4	C - 2
R4G0	D - 3
R4G1	D - 3
R4G2	D - 3
R4G3	D - 3
R4G5	D - 2
R4H0	D - 3
R4H1	C - 3
R4Q0	C - 3
R4Q1	D - 3
R4Q2	C - 2
R4R2	C - 3
R4R7	C - 3
R4R8	D - 3
R4R9	C - 2
R4S0	C - 3
R4S1	C - 3
R503	E - 6
R505	E - 6
R506	E - 6
R508	E - 6
R509	E - 6
R510	E - 6
R511	E - 6
R512	D - 6
R513	E - 6
R523	D - 6
R527	E - 6
R528	E - 6
R530	E - 6
R532	E - 6
R533	D - 6
R544	D - 6

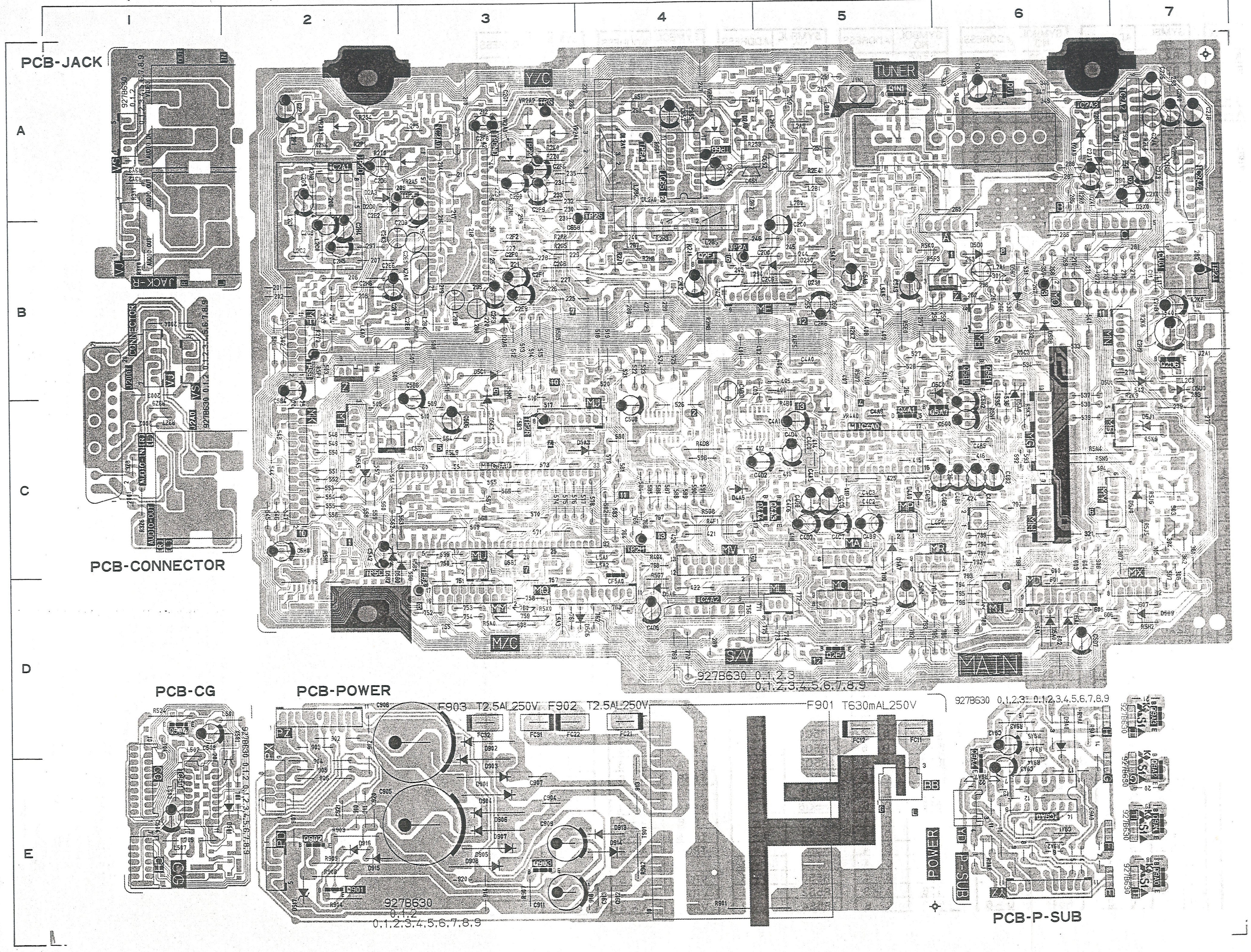
SYMBOL NO.	ADDRESS
R590	D - 6
R591	E - 6
R592	E - 6
R593	E - 6
R594	E - 7
R595	D - 6
R5A3	C - 4
R5A4	D - 4
R5A5	D - 4
R5A6	C - 5
R5A7	C - 5
R5A8	C - 5
R5A9	C - 5
R5B0	C - 5
R5B1	C - 5
R5B3	C - 5
R5B4	B - 2
R5B6	B - 4
R5B7	C - 5
R5B8	C - 5
R5C1	B - 2
R5C2	B - 1
R5C4	C - 5
R5C5	D - 5
R5C6	D - 5
R5C7	C - 5
R5C8	B - 4
R5D0	C - 4
R5D1	C - 4
R5D2	C - 4
R5D3	B - 4
R5D4	C - 4
R5D6	C - 5
R5D8	C - 4
R5D9	C - 4
R5E1	B - 3
R5E3	B - 3
R5E4	B - 3
R5E4	B - 3
R5E5	B - 2
R5E6	B - 2
R5E7	B - 2
R5E8	A - 2
R5E9	B - 2
R5F0	B - 3
R5F1	B - 3
R5F2	B - 2
R5F4	B - 2
R5F5	D - 6
R5F6	D - 6
R5F7	D - 6
R5F8	D - 6
R5F9	C - 6
R5G0	C - 4
R5G1	D - 4
R5G2	D - 4
R5G3	C - 4
R5G4	B - 4
R5G6	A - 3
R5H0	C - 6

SYMBOL NO.	ADDRESS
R5H3	C - 6
R5H4	C - 6
R5H5	C - 6
R5H6	C - 6
R5H7	C - 5
R5H8	D - 6
R5H9	D - 6
R5J0	C - 5
R5J1	C - 4
R5J2	B - 2
R5J3	C - 1
R5J4	C - 1
R5J7	C - 1
R5J8	C - 1
R5J9	C - 1
R5K1	B - 2
R5K4	D - 1
R5K5	C - 1
R5K7	C - 1
R5K8	C - 1
R5L0	C - 2
R5L1	C - 2
R5L2	C - 2
R5L3	B - 2
R5L4	C - 5
R5L5	B - 5
R5L6	C - 5
R5L7	C - 5
R5L8	C - 4
R5M1	C - 2
R5M2	C - 5
R5M3	C - 4
R5M4	C - 5
R5M5	C - 4
R5M6	C - 5
R5M7	D - 5
R5N0	C - 2
R5N2	B - 5
R5N3	B - 5
R5N8	B - 4
R5P0	B - 6
R5P2	C - 6
R5P3	C - 6
R5P4	C - 6
R5P5	B - 5
R5P7	A - 2
R5P8	A - 3
R5Q0	C - 5
R5Q2	B - 6
R5Q3	C - 4
R5Q4	C - 4
R5Q5	B - 4
R5Q6	B - 4
R5Q8	B - 3
R5R1	B - 4
R5R3	C - 3
R5R4	B - 2
R5S0	D - 5
R5S2	C - 5
R5S4	A - 2

SYMBOL NO.	ADDRESS
R5S6	B - 4
R5S7	A - 2
R5T0	C - 6
R5T2	B - 2
R5T3	C - 2
R5T4	B - 2
R5T5	C - 2
R5T6	C - 3
R5T7	D - 5
R5U0	C - 5
R5U1	C - 5
R5U2	C - 5
R5U3	C - 5
R5U4	C - 5
R5U7	A - 2
R5U8	A - 2
R5U9	A - 2
R5V0	A - 2
R5V1	B - 2
R5V3	C - 5
R5V4	C - 5
R5V5	C - 5
R5V8	C - 2
R5W1	A - 2
R5W2	A - 2
R5W4	A - 2
R5W5	A - 2
R5W6	A - 2
R5W9	A - 2
R651	A - 3
R652	A - 3
R653	A - 3
R654	A - 4
R655	A - 3
R656	A - 4
R657	A - 4
R658	A - 4
R662	A - 4
T901	E - 3
TP2A	B - 3
TP2D	A - 5
TP2E	A - 5
TP2H	C - 4
TP2J	B - 1
TP2M	A - 4
TP2R	C - 4
TP2S	B - 4
TP5A	D - 5
TP5B	B - 6
TP5C	C - 5
TP6A	A - 4
TP6B	A - 3
TPGND	A - 5
TPG	A - 4
VR2A0	A - 5
VR2A1	A - 4
VR2A2	A - 4

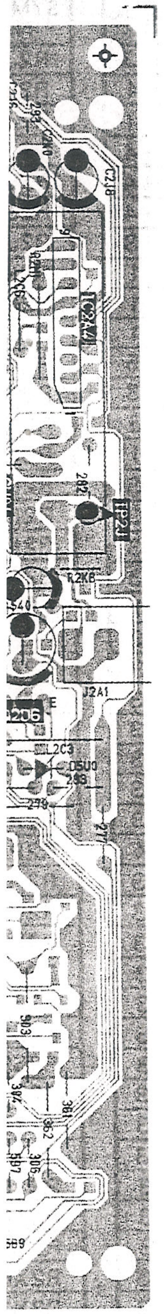
SYMBOL NO.	ADDRESS
VR2A3	A - 5
VR2A5	A - 5
VR652	A - 3

PCB-MAIN(COMPONENT SIDE)


1
2
3
4
5
6
7
A
B
C
D
E
PCB-JACK
PCB-CONNECTOR
PCB-CG
PCB-POWER
PCB-P-SUB
Y/C
TUNER
M/C
S/V
MAIN
POWER
F903 T2.5AL250V
F902 T2.5AL250V
F901 T630mAL250V
927B630 0.1.2.3
0.1.2.3.4.5.6.7.8.9
927B630
0.1.2
0.1.2.3.4.5.6.7.8.9
927B630 0.1.2.3 0.1.2.3.4.5.6.7.8.9
JACK-R
CONNECTOR
P-SUB

PCB-MAIN(COMP

SYMBOL NO.	ADDRESS
CF5A0	D – 4
CU01	A – 7
D2A3	A – 2
D2A6	B – 3
D2A8	A – 4
D2A9	A – 6
D2B0	A – 6
D2D0	A – 2
D2S0	B – 5
D2S1	B – 5
D2X0	A – 7
D2X1	A – 6
D4A0	C – 5
D4A6	C – 4
D501	E – 1
D5A0	D – 6
D5A1	D – 6
D5A3	C – 3
D5A5	C – 2
D5A6	D – 4
D5A7	C – 5
D5A8	C – 6
D5B0	C – 2
D5B1	C – 3
D5B2	C – 2
D5B7	B – 6
D5B8	B – 6
D5B9	D – 6
D5C0	B – 6
D5C1	B – 3
D5C5	C – 3
D5C6	D – 3
D5D0	B – 6
D5J0	C – 7
D5J1	C – 7
D5U0	B – 7
D5U1	B – 7
D901	E – 3
D902	D – 3
D903	E – 3
D904	E – 3
D905	E – 3
D906	E – 3
D907	E – 3
D908	E – 3
D913	E – 4
D914	E – 4
D915	E – 2
D916	E – 2
D917	E – 2
D9A0	D – 6
DL2A0	A – 4
DL2A1	A – 4
F901	D – 5
F902	D – 3
F903	D – 3



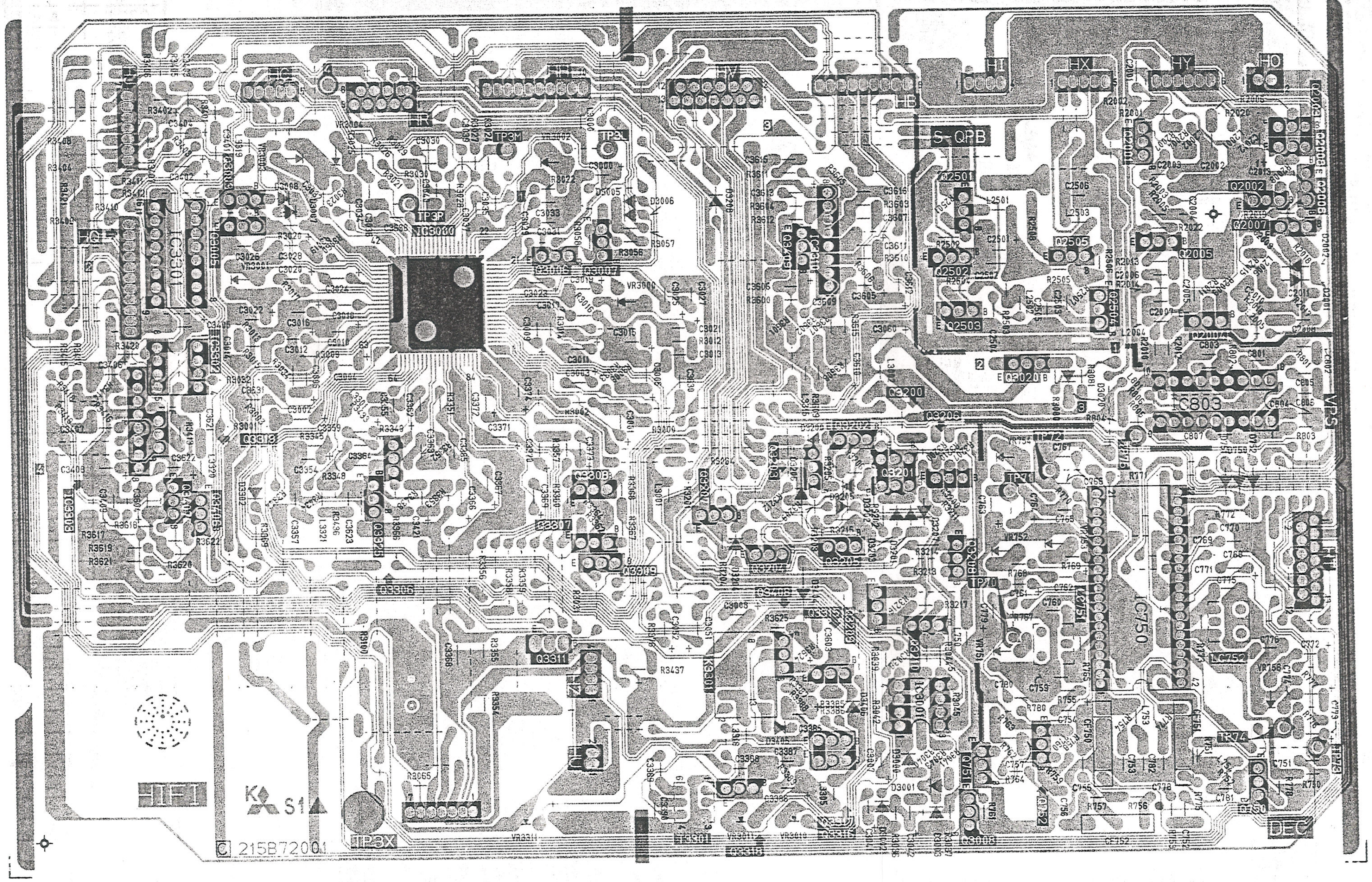
PCB-MAIN(COMPONENT SIDE)

SYMBOL NO.	ADDRESS
CF5A0	D - 4
CU01	A - 7
D2A3	A - 2
D2A6	B - 3
D2A8	A - 4
D2A9	A - 6
D2B0	A - 6
D2D0	A - 2
D2S0	B - 5
D2S1	B - 5
D2X0	A - 7
D2X1	A - 6
D4A0	C - 5
D4A6	C - 4
D501	E - 1
D5A0	D - 6
D5A1	D - 6
D5A3	C - 3
D5A5	C - 2
D5A6	D - 4
D5A7	C - 5
D5A8	C - 6
D5B0	C - 2
D5B1	C - 3
D5B2	C - 2
D5B7	B - 6
D5B8	B - 6
D5B9	D - 6
D5C0	B - 6
D5C1	B - 3
D5C5	C - 3
D5C6	D - 3
D5D0	B - 6
D5J0	C - 7
D5J1	C - 7
D5U0	B - 7
D5U1	B - 7
D901	E - 3
D902	D - 3
D903	E - 3
D904	E - 3
D905	E - 3
D906	E - 3
D907	E - 3
D908	E - 3
D913	E - 4
D914	E - 4
D915	E - 2
D916	E - 2
D917	E - 2
D9A0	D - 6
DL2A0	A - 4
DL2A1	A - 4
F901	D - 5
F902	D - 3
F903	D - 3

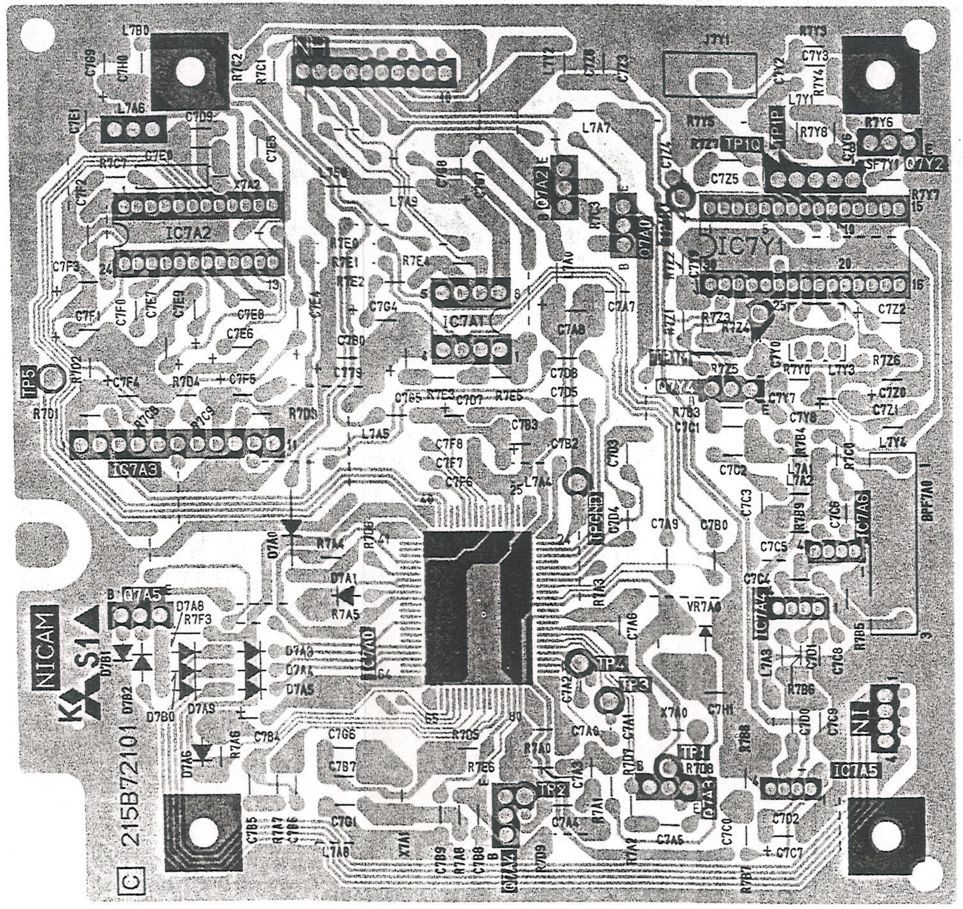
SYMBOL NO.	ADDRESS
IC2A0	A - 3
IC2A1	A - 2
IC2A2	A - 7
IC2A3	A - 6
IC2A4	A - 7
IC4A0	C - 5
IC4A2	D - 4
IC501	E - 1
IC5A0	C - 3
IC651	A - 4
IC9A0	E - 6
L11	B - 7
L2A1	B - 6
L2A8	A - 5
L2A9	A - 5
L2B0	A - 5
L2B1	A - 5
L2B2	A - 4
L2B4	B - 3
L2B5	B - 4
L2B6	A - 4
L2B7	B - 4
L2B8	B - 3
L2B9	B - 3
L2C0	B - 2
L2C1	A - 2
L2C2	B - 2
L2C3	B - 7
L2C6	A - 7
L2P1	A - 2
L2P5	A - 3
L2P6	A - 5
L4A0	B - 2
L4G0	C - 5
L501	D - 1
L502	D - 1
L503	E - 1
L507	E - 1
L5A0	B - 5
L5A1	C - 4
L5A2	C - 4
L5A3	D - 3
L5A5	B - 5
L651	A - 4
Q01	A - 6
Q1N1	A - 5
Q2D6	B - 7
Q2E1	B - 4
Q2E7	D - 5
Q4A1	C - 5
Q4A3	C - 5
Q4A4	C - 5
Q504	D - 1
Q5A7	C - 6
Q5B0	B - 6
Q5B1	B - 6
Q901	E - 2

SYMBOL NO.	ADDRESS
Q902	E - 2
Q903	E - 3
Q9A0	E - 7
Q9A1	E - 7
Q9A2	E - 7
Q9A3	D - 7
Q9A4	E - 6
T901	E - 4
TP2A	B - 4
TP2D	A - 2
TP2E	A - 2
TP2H	C - 4
TP2J	B - 7
TP2M	A - 3
TP2R	C - 3
TP2S	A - 3
TP5A	D - 3
TP5B	B - 2
TP5C	C - 2
TP6A	A - 4
TP6B	A - 4
TPGND	A - 3
TPG	A - 3
VR2A0	A - 3
VR2A1	A - 3
VR2A2	A - 3
VR2A3	A - 2
VR2A5	A - 3
VR4A0	C - 5
VR652	A - 4
X2A0	B - 3
X501	D - 1

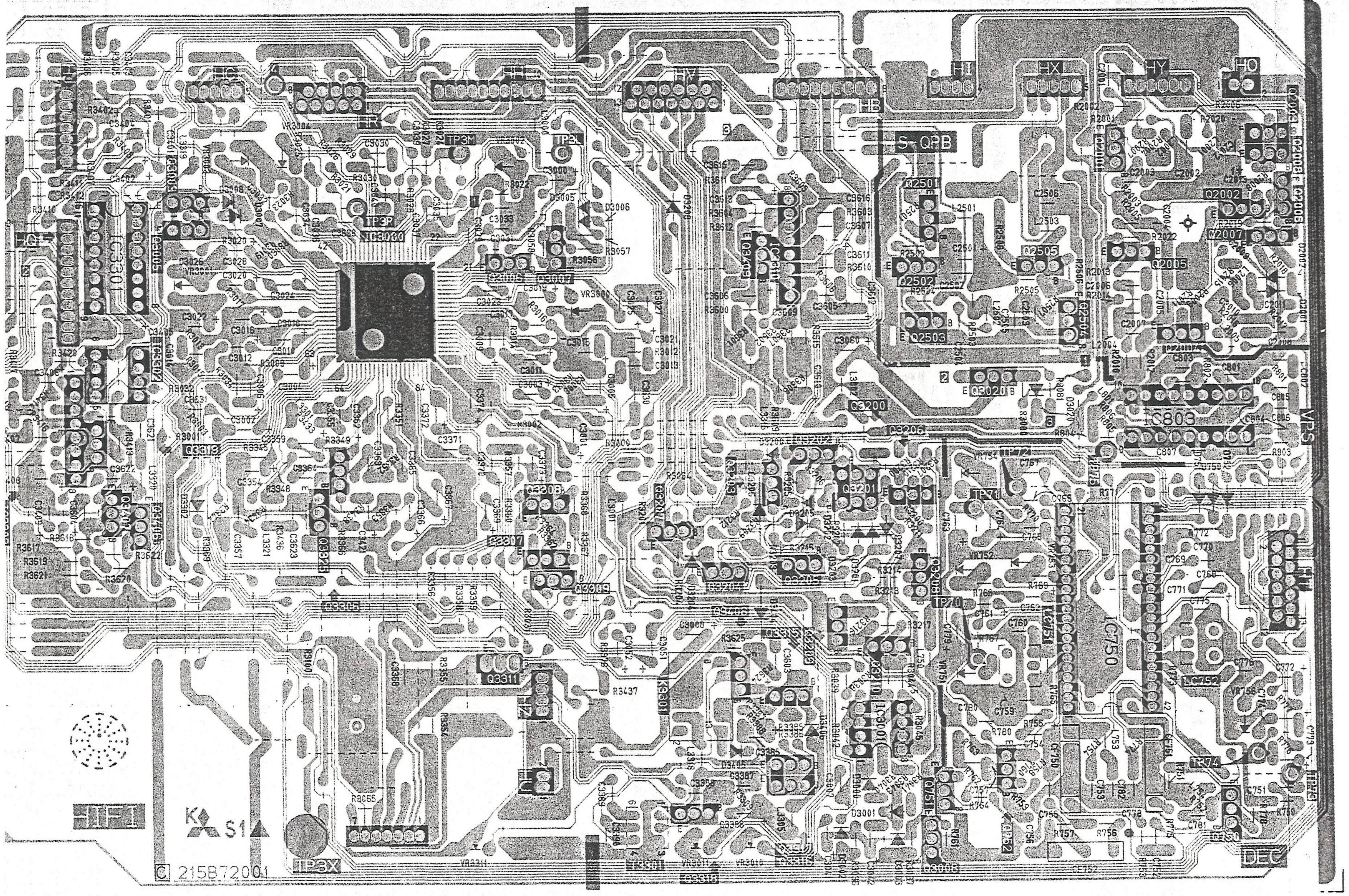
PCB-HIFI/DEC



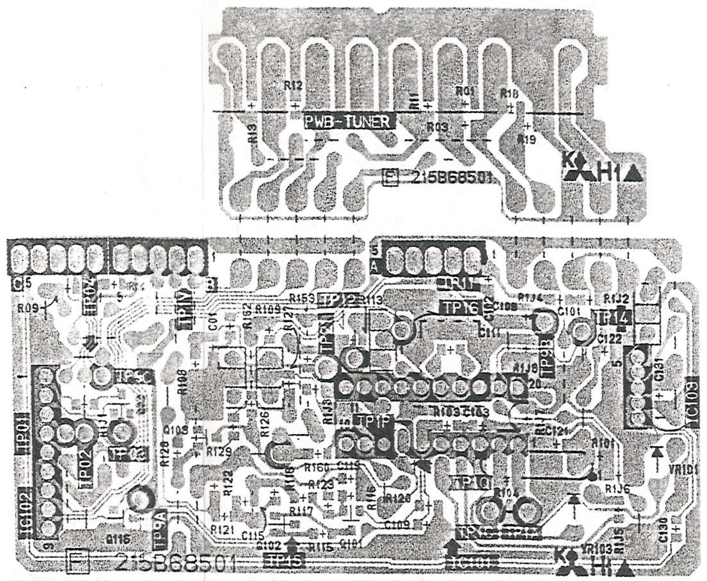
PCB-NICAM〔Except (Y),(A)〕


IC7A2
IC7A3
IC7A1
IC7Y1
NICAM
S1
215B72101

B-HIFI/DEC

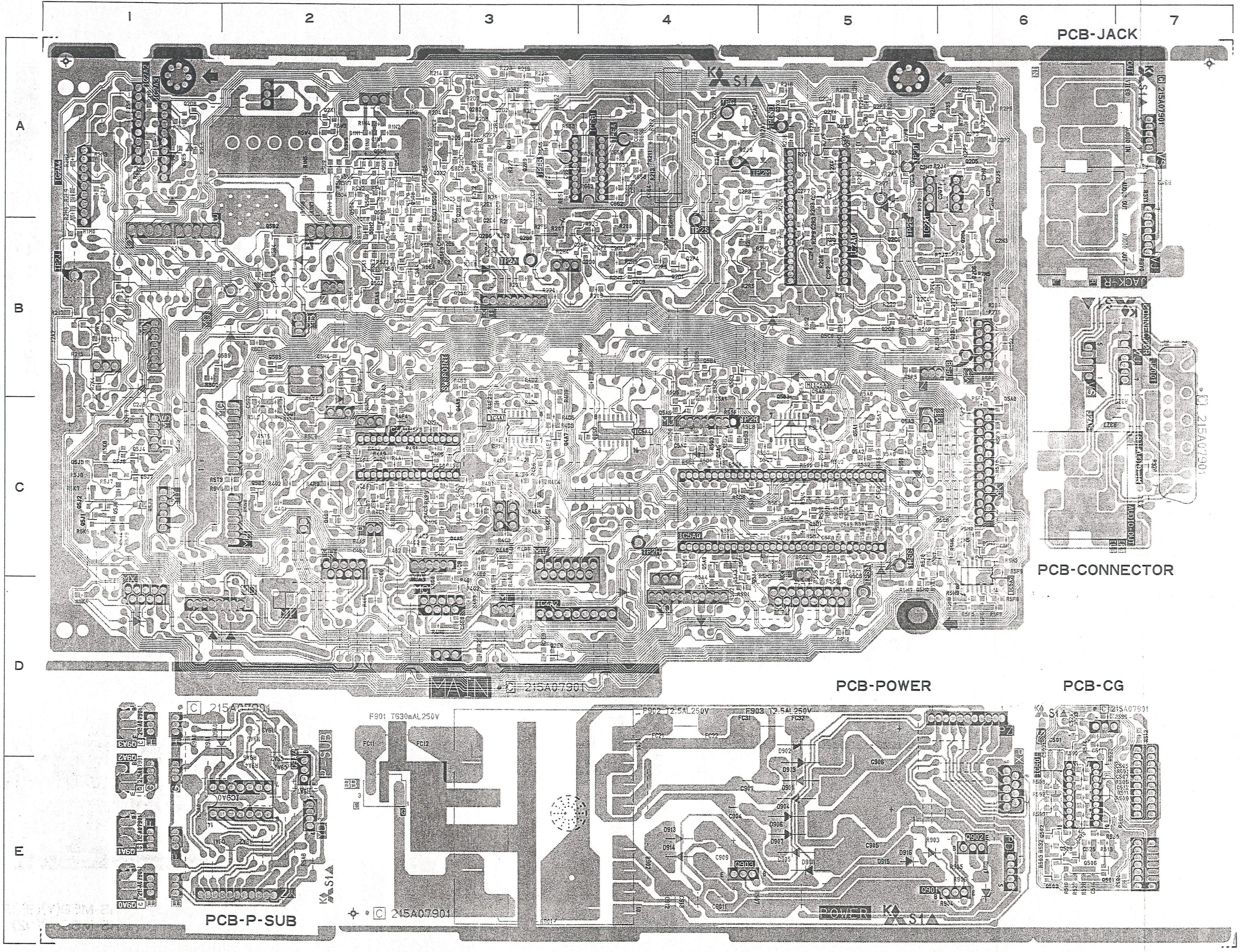

HI
HX
HY
HO
S-QRB
IC3000
IC803
IC750
VPS
HIFI
S1
215B72001
TP3X
DEC

PCB-TUNER


PWB-TUNER
215B68501
H1
215B68501

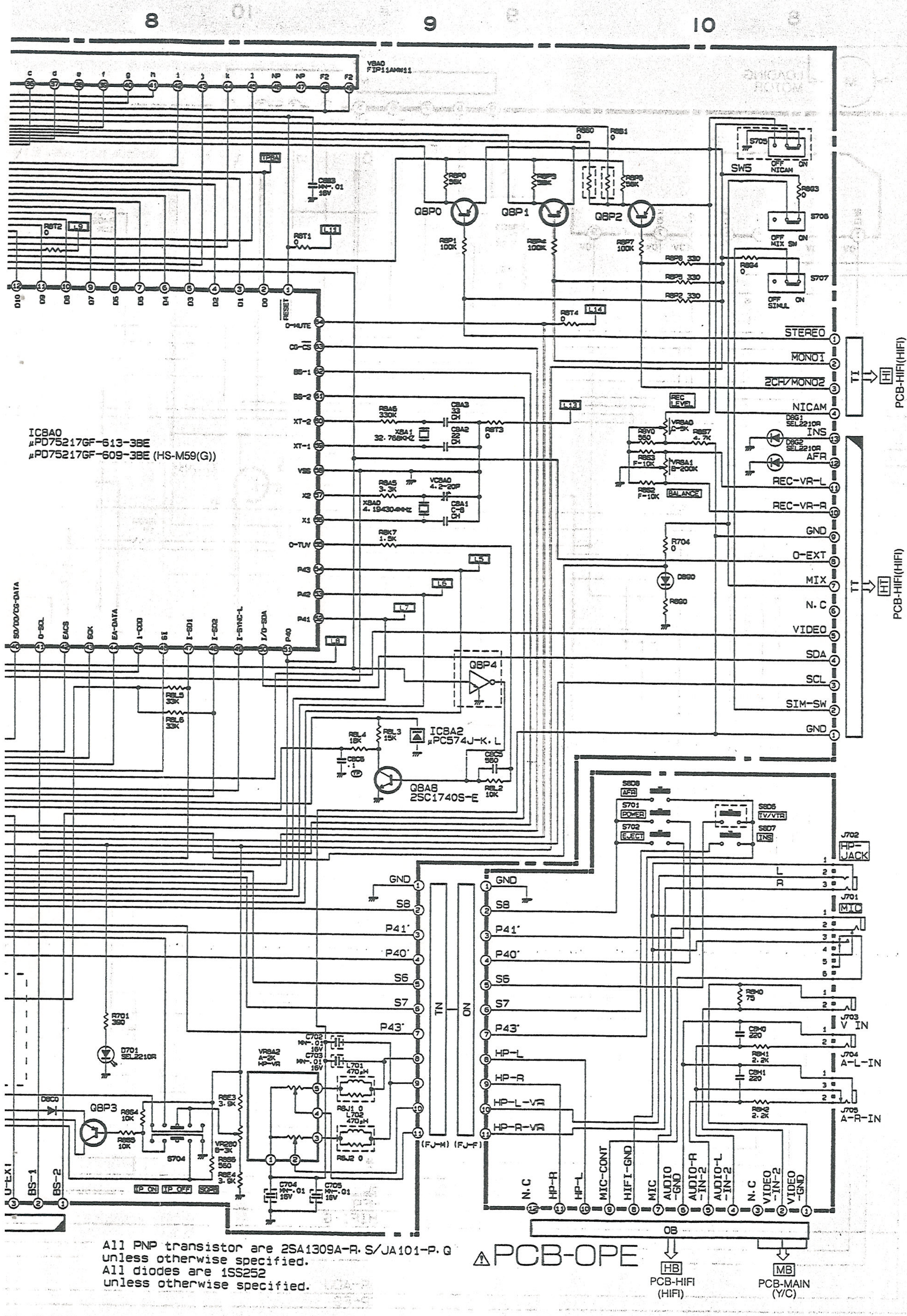
HS-M59(Y)(B)(IR)(E)
HS-M59(A)(NZ) (5/5)

PCB-MAIN(SOLDER SIDE)


1
2
3
4
5
6
7
A
B
C
D
E
PCB-JACK
PCB-CONNECTOR
PCB-POWER
PCB-CG
PCB-P-SUB
MAIN
215A07901
POWER
P-SUB
S1
F901 T630mAL250V
F902 T2.5AL250V
F903 T2.5AL250V
JACK-R

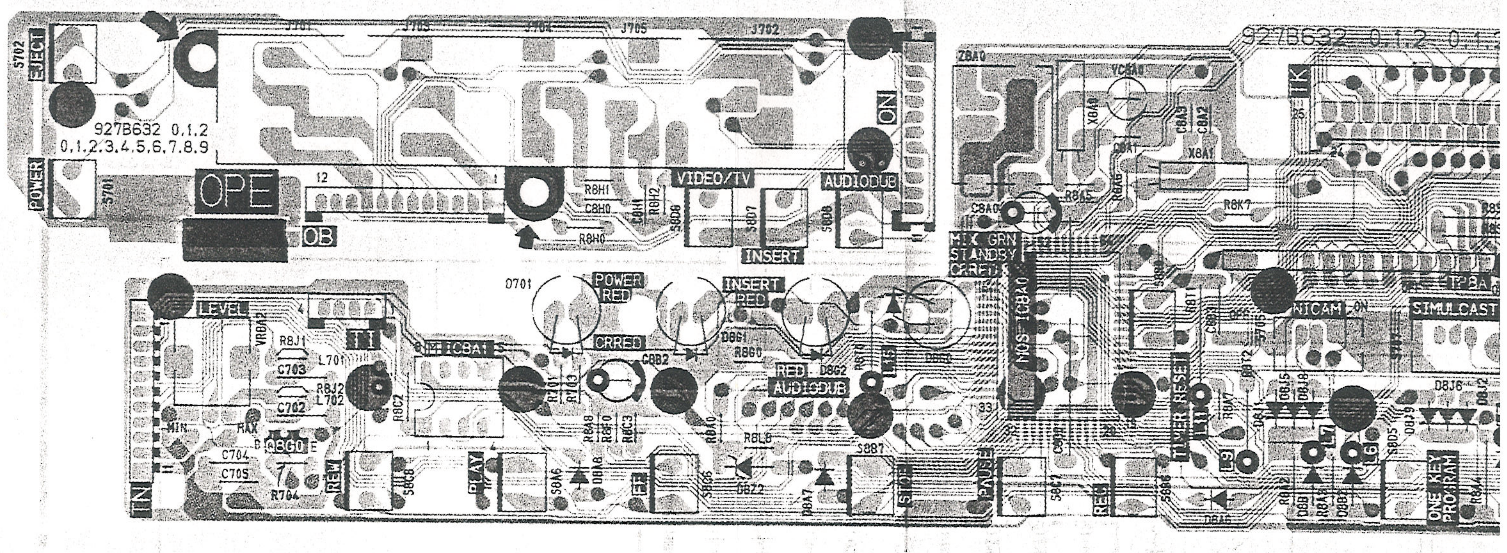
PCB-MAIN(S

SYMBOL NO.	ADDRE
C1N1	A –
C2C1	A –
C2C2	A –
C2C3	A –
C2C4	B –
C2C5	A –
C2C8	A –
C2C9	A –
C2D1	A –
C2D2	A –
C2D4	A –
C2D7	A –
C2E0	A –
C2E1	A –
C2E3	B –
C2E4	B –
C2F4	B –
C2F5	B –
C2F7	A –
C2G4	B –
C2G5	B –
C2G7	A –
C2H0	A –
C2H1	A –
C2H2	A –
C2H3	B –
C2H7	A –
C2J5	C –
C2J9	A –
C2P2	A –
C2P3	A –
C2P5	A –
C2P8	B –
C2R0	A –
C2R1	A –
C2R2	B –
C2R3	B –
C2R4	A –
C2R5	B –
C2X4	A –
C2X9	A –
C4B3	C –
C4B4	C –
C4B6	C –
C4C4	C –
C4C9	C –
C4D5	C –
C4D8	C –
C4E0	D –
C4G0	C –
C4G1	C –
C501	D –
C502	D –
C505	E –
C507	E –
C510	E –
C511	D –
C512	E –
C514	E –
C524	D –

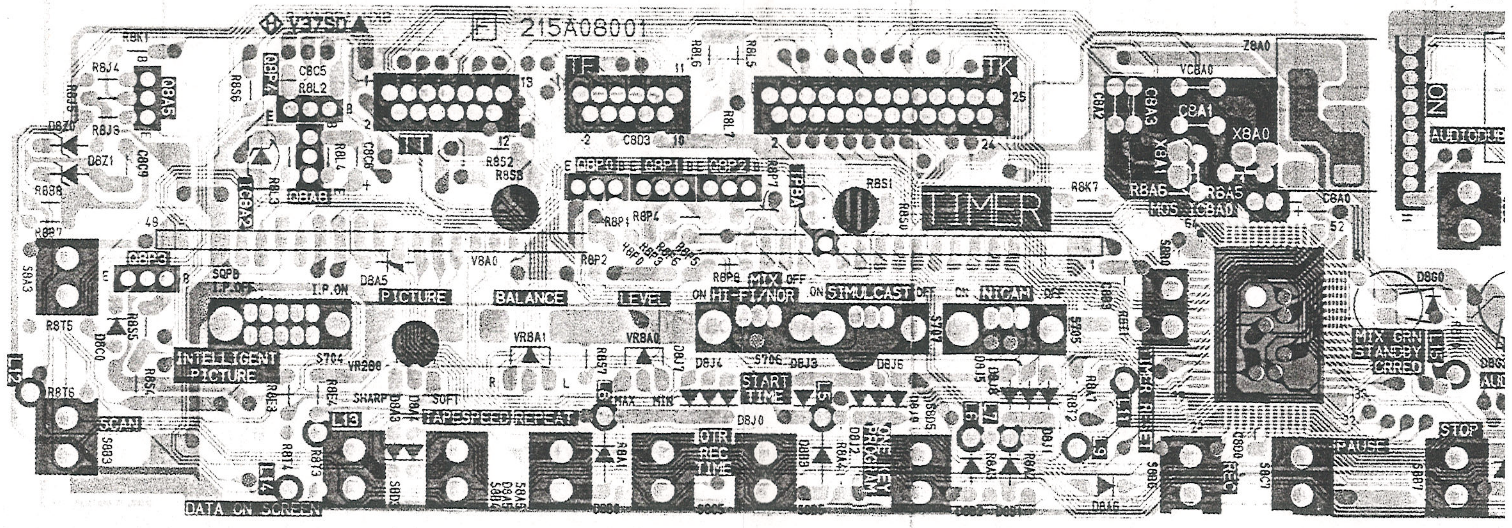

8
9
10
ICBA0
μPD75217GF-613-3BE
μPD75217GF-609-3BE (HS-M59(G))
XBA1 32.768KHz
XBA0 4.194304MHz
QBP0
QBP1
QBP2
QBP4
QBA8 2SC1740S-E
ICBA2 μPC574J-K.L
QBP3
STEREO
MONO1
2CH/MONO2
NICAM
INS
AFR
REC-VR-L
REC-VR-R
GND
O-EXT
MIX
N.C
VIDEO
SDA
SCL
SIM-SW
GND
PCB-HIFI (HIFI)
J702 HP-JACK
J701 MIC
J703 V IN
J704 A-L-IN
J705 A-R-IN
GND
S8
P41'
P40'
S6
S7
P43'
HP-L
HP-R
HP-L-VR
HP-R-VR
(FJ-M)
(FJ-F)
N.C
HP-R
HP-L
MIC-CONT
HIFI-GND
MIC
AUDIO -GND
AUDIO-R -IN-2
AUDIO-L -IN-2
N.C
VIDEO -IN-2
VIDEO -GND
OB
⚠PCB-OPE
HB
PCB-HIFI (HIFI)
MB
PCB-MAIN (Y/C)

All PNP transistor are 2SA1309A-R.S/JA101-P.Q unless otherwise specified.
All diodes are 1SS252 unless otherwise specified.

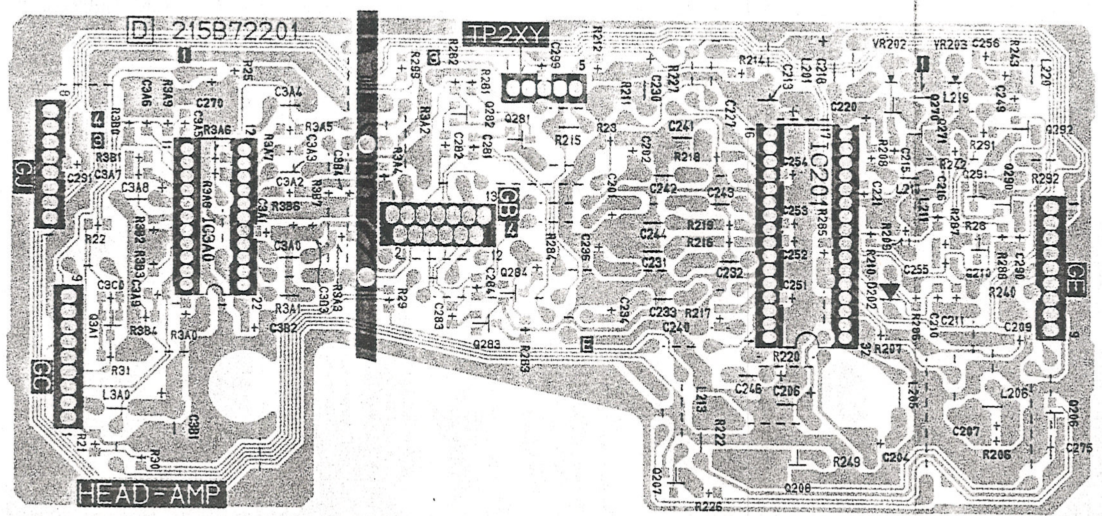
PCB-TIMER/OPE(COMPONENT SIDE)

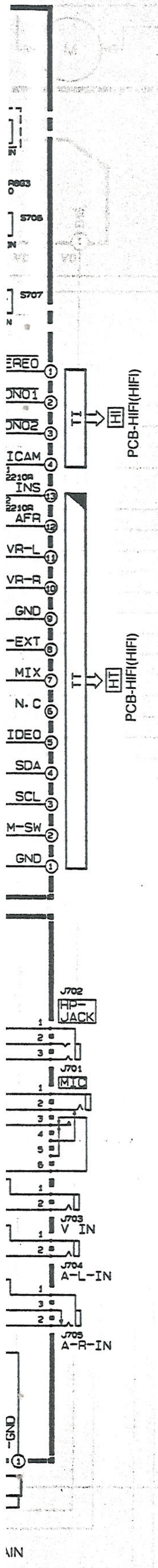

927B632 0.1.2
0.1.2.3.4.5.6.7.8.9
OPE
OB
POWER
EJECT
VIDEO/TV
AUDIODUB
INSERT
ON
LEVEL
POWER RED
INSERT RED
CRRED
RED AUDIODUB
NICAM
SIMULCAST
MIX GRN STANDBY CRRED
TIMER RESET
ONE KEY PROGRAM
PLAY

PCB-TIMER/OPE(SOLDER SIDE)

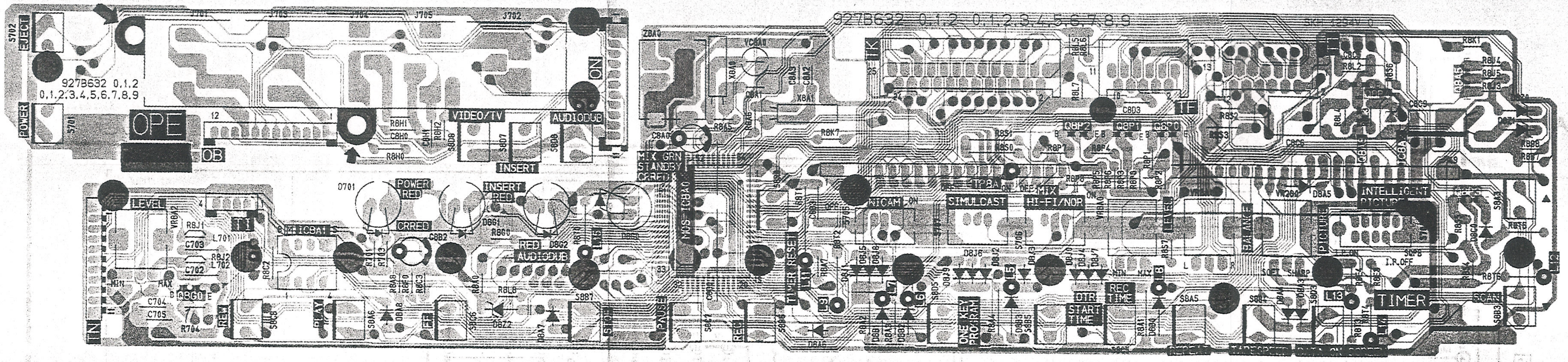

215A08001
TIMER
PICTURE
BALANCE
LEVEL
HI-FI/NOR
SIMULCAST
NICAM
INTELLIGENT PICTURE
SHARP
SOFT
TAPESPEED
REPEAT
START TIME
OTR REC TIME
ONE KEY PROGRAM
SCAN
DATA ON SCREEN
MIX GRN STANDBY CRRED
STOP
PAUSE
AUDIODUB
ON

PCB-HEAD-AMP

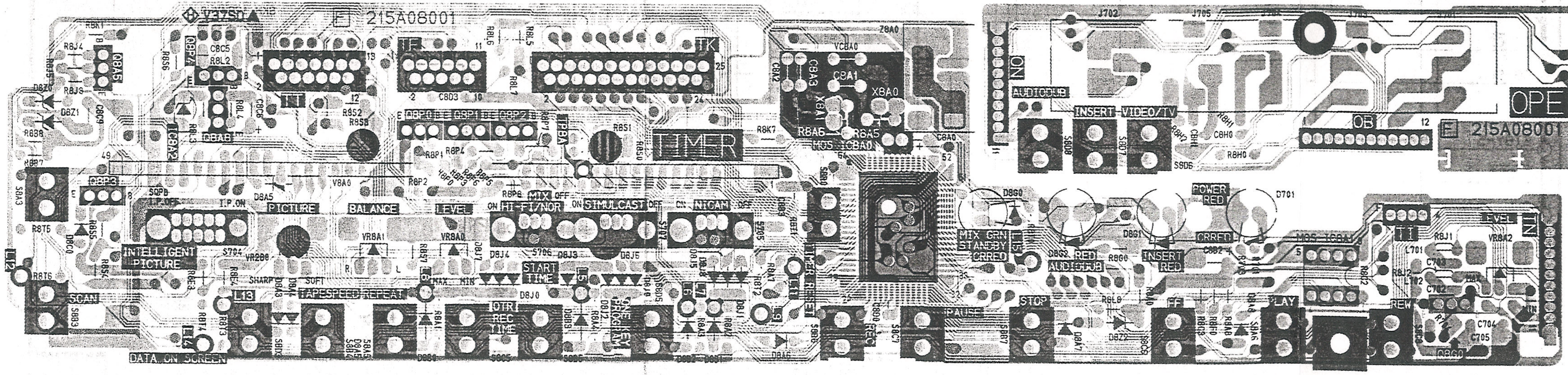

215B72201
TP2XY
IC201
HEAD-AMP


STEREO
MONO1
MONO2
NICAM
INS
AFR
VR-L
VR-R
GND
MIX
N.C
VIDEO
SDA
SCL
M-SW
GND
PCB-HIFI(HIFI)
J702
HP-JACK
J701
MIC
J703
V IN
J704
A-L-IN
J705
A-R-IN
GND
MAIN

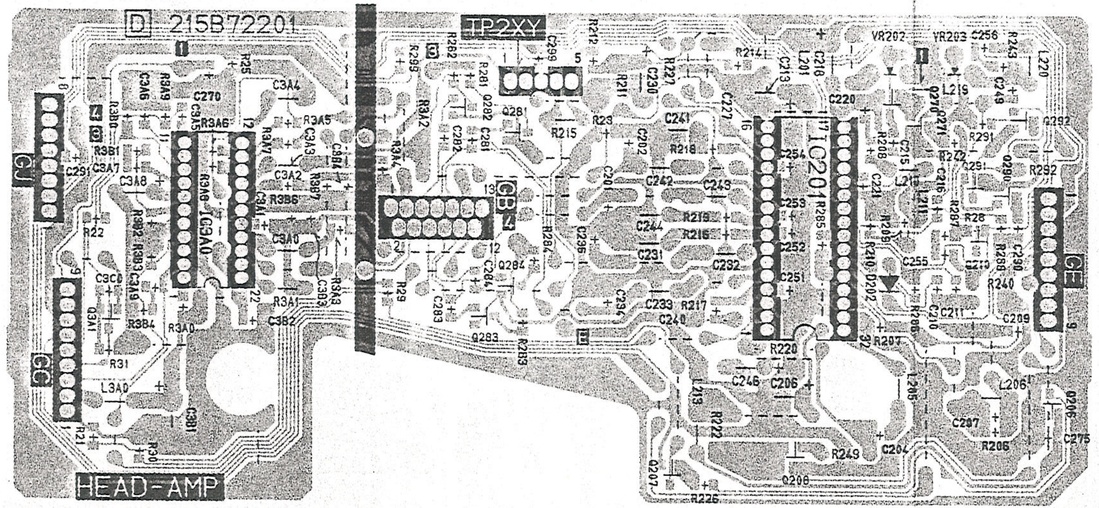
PCB-TIMER/OPE(COMPONENT SIDE)


927B632 0.1.2 0.1.2.3.4.5.6.7.8.9
EJECT
POWER
OPE
OB
VIDEO/TV
INSERT
AUDIODUB
ON
LEVEL
POWER RED
INSERT RED
CRRED
RED AUDIODUB
MIX GRN STANDBY CRRED
TIMER RESET
NICAM
SIMULCAST
MIX HI-FI/NOR
TK
TF
INTELLIGENT PICTURE
BALANCE
PICTURE
ONE KEY PROGRAM
DTR START TIME
REC TIME
TIMER
SCAN
IN

PCB-TIMER/OPE(SOLDER SIDE)


V37SD
215A08001
TK
TF
TIMER
SCAN
INTELLIGENT PICTURE
PICTURE
BALANCE
LEVEL
MIX HI-FI/NOR
SIMULCAST
NICAM
START TIME
TAPESPEED
REPEAT
DTR REC TIME
ONE KEY PROGRAM
DATA ON SCREEN
MIX GRN STANDBY CRRED
PAUSE
STOP
FF
PLAY
REW
POWER RED
INSERT RED
RED AUDIODUB
CRRED
AUDIODUB
INSERT
VIDEO/TV
OPE
OB
EJECT
POWER
ON
IN

PCB-HEAD-AMP


215B72201
TP2XY
IC201
GJ
GB
GE
GG
HEAD-AMP